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# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

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Vol. XXXVI

JANUARY, 1921

No. 1



## GOVERNOR MORRISON ON HEALTH

We must throw around the home and life of our people an enlightened world's knowledge of preventive medicine, and make ceaseless war upon sickness, suffering and death in this State. Our great department of health must be generously nourished and equipped for this humane service. Disease cannot be successfully prevented by individual effort alone. Modern statesmanship demands that every practical effort shall be made through organized health boards and expert officers to protect the health of the people. Our health department has accomplished wonders with the means furnished. I believe I express the deep desire of our enlightened people when I urge increased strength for this great department of our government.

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## DAMAGES FOR TRANSMITTING DISEASE

A North Carolina woman has been awarded damages in the sum of \$10,000 against her husband because he infected her with a venereal disease. The case was appealed from the lower court and affirmed by the Supreme Court.

The decision, written by Chief Justice Walter Clark, is reprinted in full on other pages of this issue of THE HEALTH BULLETIN. It marks a distinct advance in the public attitude towards responsibility for venereal disease. Perhaps the advance in recognizing the rights of a married woman as an individual is more fundamental and more far-reaching in its ultimate effects, but the advance in recognizing responsibility of an infected person for transmitting the disease with which he is infected is the question of immediate concern here.

The rules and regulations of the State Board of Health for the control of venereal diseases require a person infected with such disease to report to a legally qualified physician for treatment. This rule is based upon the idea that the person infected is responsible to the public and is under obligation to seek proper treatment so as not to transmit infection to others. This principle of personal responsibility of the infected person for the spread of venereal diseases is now made a part of the law of North Carolina through the decision of the Supreme Court.

If a wife can collect damages from her husband for infecting her with venereal disease, any person can collect damages from another for like cause. Under other circumstances the question as to the right to recover damages would not be complicated by the

marriage relation, and the discarded notion that the wife is the husband's chattel could not be invoked as mitigating the offense.

This decision marks a milepost along the road being blazed in the attack on venereal diseases. Recognition of the basic principle of personal responsibility is of the highest importance both in formulating administrative procedures, and in fixing standards of conduct to prevent the spread of such diseases. The Supreme Court by this action has placed North Carolina still further in the forefront of the States effectively dealing with public health.

## GUARD AGAINST MEASLES

Parents are urged to guard their children against measles. There are still many people who feel that it is a good thing for their children to have measles, whooping-cough, and all the other communicable diseases so common to childhood as early as possible. "Let them have it and get it over with. It won't hurt as bad as when they are older," is the way one mother expressed her sentiments when warned to keep her children away from a home where there was a case of measles. The prevalence of this sort of feeling largely explains the fact that right now there is in the State a very large number of cases of communicable diseases, with innocent children the sufferers.

Measles especially should be guarded against with all possible care. The evil companions of measles are weak eyes, abscess of the ears that frequently leads to deafness, and pneumonia. Next to disorders of the stomach, measles is one of the most deadly of communicable diseases among children. There is no specific treatment which can be offered for protection. The only

safe way is to keep your children very carefully free from contact from others in whose homes there are cases.

If a child has been exposed and develops a cold, with red, watery eyes, and is feverish, put the child to bed, and call a physician. Be careful. But it pays best to be careful first, and protect the child from infection by others.

### A DECISION OF IMPORTANCE

It is very gratifying to find that the Journal of the American Medical Association heartily approves of the decision of the North Carolina Supreme Court under which a woman is allowed to recover damages from her husband when he infects her with a foul disease. This medical authority says:

"In our medico-legal department this week appears an abstract of a decision of the Supreme Court of North Carolina which recently affirmed a judgment of a lower court, allowing damages of \$10,000 to a wife against her husband who had infected her with venereal disease. This decision is of importance from the standpoint of public health as well as from a legal standpoint. Legally, it sets aside the old belief that the husband and wife are one, he being that one, and that she has no recourse against him for any acts performed outside the law. Primitive conditions making the wife a chattel have passed. Today the woman is equally a citizen with her husband. As already established by court decisions, a husband is liable if he assaults or slanders his wife. It is a credit to the enlightenment of the Supreme Court of North Carolina that it should see that the communication of a venereal disease is a greater injury than the breaking of an arm or other physical damage."

The opinion of the court in this case was one of the most striking evidences noted in a long time of an advancing moral standard in North Carolina. The people look to men in high place for leadership, for declarations as to what are proper standards. The

condemnation of immoral living contained in the decision sustaining the lower court's judgment in this case must have come home with something of a jolt to many a young man.

Moral living is in considerable degree dependent on public opinion. If we have a public opinion that sternly decries unclean lives there will be less and less of that kind of living.—*Raleigh News and Observer*.

### THE FRUITS OF QUACKERY

One of the best hotels in a great city, towering high on a beautiful boulevard, almost within the business district and yet overlooking the lake! In a beautiful suite high up, away from the noisy bustle of the city, sits a kindly looking gray-haired man. A touch of the wall-buttons brings servants scurrying to do his bidding, for he is free with tips and with his smile. At his word a seven-passenger Peugeot, of the latest model, guided by a uniformed chauffeur, rolls up to the entrance. He wishes, perhaps, to attend the theater or to take an airing in the park, or to see a friend. Not too often the latter, for he has few friends! The transient guests inquire of the clerk as to his identity. Perhaps he is a member of some foreign royal family; perhaps a magnate resting on the well-earned laurels of some gigantic deal in copper or in cotton! But no! It appears he made his fortune by selling sugar and salt. A pinch of salt and a pinch of sugar in a barrel of hydrant water, guaranteed to cure any disease if the sufferer will only put one drop in each eye night and morning—approximate cost, 6 cents a gallon—selling price, \$5 an ounce! Through the Middle West, in little country graveyards, are the bodies of some who read the advertisements and believed. And the "professor" orders out his car and says to the chauffeur with a lordly wave of his hand: "To the park, James." The mills of the gods grind slowly. . . . Obviously.—*Journal of A. M. A.*

## ADVANCED STAND BY SUPREME COURT

**In Crowell v. Crowell Highest Court Rules That Husband Must Pay Damages For Infecting Wife With Venereal Disease**

The majority opinion of the North Carolina Supreme Court, written by Chief Justice Walter Clark, in the case of *Crowell v. Crowell*, from Mecklenburg County, broke new ground in the construction of law affecting marital relations, and in fixing personal responsibility upon one guilty of infecting another with a venereal disease. The opinion is of such importance that THE HEALTH BULLETIN herewith reprints it in full.

Lacy Crowell v. W. J. Crowell.

Appeal by defendant from Lane, J., May Term, 1920, of Mecklenburg.

This is an action by the wife against the husband alleging in her complaint the marriage and their living together as man and wife; that the defendant contracted a venereal disease, and that he "took advantage of his marital relation with said plaintiff and infected her with said vile and loathsome disease," and asks for judgment "for actual and punitive damages."

The defendant filed a written demurrer to the effect that the complaint showing upon its face that the parties were man and wife prior to, and during all the time of the acts complained of, that "the complaint does not contain facts sufficient to constitute a cause of action." And further, that said action is "both without law to warrant the maintenance thereof, and also against the public policy of the State."

The Court overruled the demurrer, and thereupon the defendant filed an answer, and upon the issues submitted the jury found that the defendant "wrongfully and recklessly infected the plaintiff with a loathsome disease, as alleged in the complaint," and assessed the plaintiff's damages at \$10,000, and further, that at the institution of this action the defendant was about to dispose of his property

and remove it from this State for the purpose of defrauding the plaintiff.

The defendant excepted and appealed from overruling the demurrer; for refusal to set aside the verdict; for permitting the plaintiff to testify that the day before they separated she informed him that he had infected her with venereal disease; and to testify that she estimated the value of his property to be worth between \$25,000 and \$50,000, and that he was disposing of it very rapidly, getting her to join in deeds for most of the property, and he told her that he was going to Cuba to make his home and to set up a bar room.

The defendant also excepted to the following paragraphs in his Honor's charge:

1. "If you find as facts from the evidence, and by its greater weight, that the defendant knew that he was infected with a foul and loathsome venereal disease; and thereafter, although having such knowledge, he wrongfully had sexual intercourse with the plaintiff, and thereby infected her with said disease, that he did so willfully and recklessly—that is, in reckless and wanton disregard of the plaintiff's rights, being indifferent to her welfare, and not caring whether he infected her or not—then you should answer the first issue, 'Yes.'"

2. "She would be entitled to a just and reasonable compensation for whatever injuries she may have sustained as a necessary and proximate result of the defendant's wrong. She would be entitled to a just and reasonable compensation for any physical or mental suffering which followed as a necessary and proximate result of the defendant's wrong."

3. "If you come to the issue of damages, you might, if in your discretion you saw fit, allow the plaintiff punitive damages." Judgment and appeal.

Stewart & McRae and John M. Robinson for plaintiff.

Thaddeus A. Adams for defendant.

CLARK, C. J. The defendant made no motion to nonsuit, and does not contend that there was not sufficient evidence to justify the verdict on the first issue, "Did the defendant wrongfully and recklessly infect the plaintiff with a loathsome disease as alleged in the complaint." He submitted no requests for instructions. The exceptions to the evidence do not require discussion. Practically the only point presented by this appeal is whether or not a cause of action is alleged in the complaint.

Paragraph 5 of the complaint alleges "that the defendant, by reason of his illicit relations with lewd and profligate women, contracted a venereal disease of a foul and loathsome character, and of a highly infectious and malignant nature, and although he well knew that he was so infected and well knew the character of said disease, and its dangerous and infectious nature, he concealed from the plaintiff the fact that he was so infected with said disease, and on or about the.....day of ....., 1919, committed an assault and trespass upon the person of the plaintiff, and infected her with said foul and loathsome disease, injuring and damaging her as hereinafter set out."

There can be no question, in this day, that if the defendant had violently assaulted his wife and caused serious bodily injury to her person, and humiliation to her, she could maintain an action for damages against him. Even under the obsolete ruling of the courts (for it was never statutory) that a husband could chastise his wife with immunity, there was an exception that he was liable if he caused her serious bodily harm or permanent injury.

In *S. v. Monroe*, 121 N. C., 677, it was held that a druggist committed an assault when he dropped croton oil on a piece of candy and gave it to a third party. It was a far greater assault for the husband to communicate to his wife, while concealing from her the fact that he was infected

therewith, a foul and loathsome disease—which has caused her serious bodily injury, and which the medical books hold to be a permanent injury of which she can never be entirely cured.

In *S. v. Fulton*, 149 N. C., 485, the Court held that the husband was indictable for wantonly and maliciously slandering his wife, under Rev., 3640, now C. S., 4230, which made it indictable for "any one to slander an innocent woman." The objection was there taken that this did not apply to the husband because of the marriage relation, and that this had been so held in *S. v. Edens*, 95 N. C., 693. The Court overruled *S. v. Edens*, though it held by a divided Court that the defendant in the *Fulton* case had a vested right to rely upon *S. v. Edens*.

The plaintiff, who was 22 years of age, and living with her father at the time of her marriage, was shown to be of good character at that time and ever since by a minister of the gospel and other witnesses, and even the defendant testified that "the plaintiff was a virtuous woman, and was faithful to me during our married life, and yet is, so far as I know—I don't say otherwise." He further testified that he was divorced from his first wife; that he committed adultery while living with his second wife, and furnished her with witnesses to prove it by which she got a divorce upon that ground; that he had had trouble in Gastonia on account of a woman, and says "women have always been my trouble. Have recently been convicted of being drunk and carrying a pistol." It was stated on the argument that the defendant has recently been convicted in Virginia under the white slave act and sentenced to 2 years, and has also been convicted and sentenced in that State for abduction of a girl under 16, and that case is pending on appeal.

The defendant also admitted on cross-examination that he has had venereal disease, and said: "Sometimes it takes me longer to get over a case of gonorrhœa than others. Sometimes it takes me a month, sometimes four months, and sometimes six months.



. . . On Sunday after this suit was started I had a lewd woman in my automobile, and passed the plaintiff's house four times, I had my arm around the back of the seat."

Notwithstanding that the defendant had testified on the cross-examination that his wife was a virtuous woman, he intimated on being recalled that he was forced to marry her because she had become pregnant by him. The plaintiff testified that he did not have sexual intercourse with her until after the marriage, and that he tried to get her to procure a divorce from him, offering to furnish her with witnesses to prove his adultery while living with her. He did not deny this, and admitted that he had done this with his second wife to enable her to get a divorce. The testimony of the plaintiff was that she had contracted the disease from her husband, and as to her humiliation and physical injury sustained thereby, and the physician testified that she was thus infected, and that his diagnosis was confirmed by clinical findings and by laboratory tests of another expert. The defendant testified that on one occasion "plaintiff came to my office and could not get in; I was locked in, the woman in there got out."

As the plaintiff's counsel well said, aside from the question of assault, it is a well settled proposition of law that a person is liable if he negligently exposes another to a contagious or infectious disease. *Skillings v. Allen*, 173 (Minn.) N. W., 663. *A fortiori* the defendant would be liable in the present case whether guilty of an assault or not, and independent of the fraud or concealment. In *Schultz v. Christopher*, 65 Wash., 496, and in *Bandfield v. Bandfield*, 117 Mich., 80 (cases cited by the defendant) the court recognized that the infection of the wife with venereal disease by the husband was a tort, but held that upon their statutes, which differ from those in this state, the wife could not sue her husband for a tort upon her person. But in *Prosser v. Prosser* (1920), 102 S. E. (S. C.) 787, under a statute which is verbatim our Rev., 408, C. S., 454;

it was held that "under such statute a married woman can maintain an action in tort against her husband for an assault upon her," holding that while it was otherwise at common law a proper construction of this statute "gives to a wife every remedy against the husband for any wrong she might suffer at his hands. More than this, a wife has a right in her person, and a suit for a wrong to her person is a thing in action; and a thing in action is property, and is her property, and the action is therefore maintainable under *Messervy v. Messervy*, 82 S. C., 550."

In *Graves v. Howard*, 159 N. C., 594, *Allen, J.*, said: "Rev., sec. 408, further provides that the wife may maintain an action without joinder of her husband: (1) when the action concerns her separate property; (2) when the action is between herself and her husband; and our court has construed this section to confer upon the wife the right to maintain an action against her husband. *Shuler v. Millsaps*, 71 N. C., 297; *McCormac v. Wiggins*, 84 N. C., 279; *Manning v. Manning*, 79 N. C., 293; *Robinson v. Robinson*, 123 N. C., 137, and *Perkins v. Brinkley*, 133 N. C., 158."

The defendant objects that this applies only to property rights concerned in actions, but damage or injury to her person is a property right. Our Statute, 1913, Ch. 13, provides: "The earnings of a married woman by virtue of any contract for her personal service, and any damage for personal injuries, or other torts sustained by her, can be recovered by her suing alone and such earnings or recovery shall be her sole and separate property, as fully as if she had remained unmarried." This gives her the right of recovery of damages for any personal injury or other tort sustained by her, and there is no exemption of her husband from liability in an action by her which she is authorized to bring under Rev., 408, C. S., 454. As long as the court held (*Price v. Electric Co.*, 160 N. C., 450) that the recovery by the wife of damages for personal injuries was the property of the husband, it was useless for her to sue him under the right given

by Rev., 408 (2), but the Act of 1913, ch. 13, making such damages her property, was promptly passed at the first session of the General Assembly thereafter, curing this and enabled the wife to maintain an action against her husband to recover damages for injuries committed upon her person by him.

For the same reason that in *S. v. Fulton*, supra, the court held that the statute making "anyone" liable to indictment for the slander of a virtuous woman made the husband liable to such indictment, notwithstanding the common law theory and overruling the express decision in *S. v. Edens*, supra, to the contrary, we must hold that the statute of 1913, ch. 15, and Rev. 408, gave the wife a right to recover damages for injuries to her person, or for other torts sustained by her, against her husband as fully as against anyone else, as was held in *Prosser v. Prosser*, supra.

In 26 R. C. L., 577, it is said: "The fact that a case is novel does not operate to defeat a recovery if it can be brought within the general rules applicable to torts." In *Brown v. Brown* (1914), 88 Conn., 42, that court pertinently says that "if the wife may sue for a broken promise, why may she not sue for a broken arm?" Like the S. C. Court in the *Prosser* case, it holds that her claim for damage is a property right. It says: "The tort gives rise to a claim for damages. Such a claim is property, not in her possession, but which she may by action reduce into possession, just as she might before her coverture, have had an action against him for such a tort committed before that event. The husband's delict, whether a breach of contract or a personal injury, gives her a cause of action. Both necessarily follow from the fact that a married woman now retains her legal identity and all her property, both that which she possessed at the time of marriage and that acquired afterwards."

In *Johnson v. Johnson* (Ala.), 77 So., 335, the court held that the statute of that state authorizing the wife to recover damages for injuries to her person or reputation made the damages

her separate property and the statute which authorized her to sue alone for their recovery authorized her to sue her husband for such injuries and torts, abrogating the common law fiction of identity between husband and wife to that extent. The statutes of that State upon that subject are almost identical with ours above quoted.

*Fielder v. Fielder*, 42 Okla., 124, held that a married woman could maintain an action against her husband for injuries received from a gun shot wound inflicted during coverture. That case referring to *Thompson v. Thompson*, 218 U. S., 611, pointed out that the latter decision was based upon the statutes for the District of Columbia which in this respect are not as liberal and progressive as in most of the states, and the court concurred in the dissenting opinion of Justices Harlan, Holmes, and Hughes (which in the opinion of the writer was the "big end" of the court at that time).

In *Gilman v. Gilman*, 78 N. H., 4, it was held that the statute of that state, providing that a married woman may "sue and be sued on any contract by her made, or for any wrong done, as if she were unmarried," put husband and wife on an equality as to property, torts, and contracts, and that she could maintain an action against her husband for assault as fully as she could against any one else. In *Fitzpatrick v. Owens*, 124 Ark., 167, the court held that a married woman may maintain an action against her husband for a tort, in that case for an assault, and when it resulted in a wrongful death her administrator could maintain an action therefor. And this is the trend of recent decisions throughout the country, 13 R. C. L., 1397, and notes 1915 D., p. 73.

At common law neither civil nor criminal actions could be maintained by the wife against the husband because of the alleged unity of persons of husband and wife, or rather the merger of the wife's existence into the husband's. The real reason was that by marriage the wife became the chattel of the husband (as a reminder of which to this day at a marriage some man "gives this woman away") and

therefore her personal property by the fact of marriage became his, as was the case in this state, as to wives, until the Constitution of 1868, though as slaves it had ceased on their emancipation in 1865. The owner lost the right to chastise his slaves in 1865, but the wife was not emancipated from the lash of the husband till nine years later, in 1874, when in *S. v. Oliver*, 70 N. C., 60, Settle, J., tersely said, "we have advanced from that barbarism." His authority for making such ruling was that ch. 5, Laws 1715, and ch. 133, Laws 1778, now C. S., 970, adopted such parts only of the common law which are "not abrogated, repealed, or become obsolete." So much of the common law as exempted the husband from liability, civilly or criminally, for assaults, slanders, or other torts or injuries committed by him on his wife is invalid now, both because it has become obsolete and at variance with the customs and sense of right, and with our form of government which confers "equality before the law" upon all and because they have been expressly abrogated and repealed by the statutes above quoted which confer upon the wife the right to sue and be sued alone "when the action is between herself and her husband," and to recover, suing alone, damages for her personal injuries or other torts sustained by her (Laws 1913, ch. 13, now C. S. 2513) without exempting her husband from such liability.

The true ground for the exemption of the husband from liability to the wife for his torts, and for his assumption of her property, as already said, was because by the marriage she became his chattel. The fanciful ground assigned for this doctrine, which was far more unjust to married women than that prevailing in other countries under the civil law or even in the countries under the rule of the Koran, is stated by some of the old writers to be the words in Genesis 2:23-24: "And Adam said 'this is now bone of my bones and flesh of my flesh,' adding that a man and wife 'shall be one flesh.' And now, 'speaking for myself and not by commandment' (as St. Paul said on more than one occasion, I Cor. 7:6, and II

Cor. 8:8) this statement was made by Adam and not by Deity, and is untrue as a matter of fact, besides Adam was not a law-giver, but the most culpable law-breaker known to all the ages. The consequence of his law-breaking according to the belief of multitudes was the greatest and most universal of any man, and according to orthodox teachings, affects all mankind since, and if we are to credit the vision of the great English poet, had its immediate effect upon the inanimate world as well:

"Earth felt the wound; and nature from  
her seat,

Sighing through all her works, gave  
signs of woe

That all was lost."—Paradise Lost,  
Bk. IX, line 782.

It is more than passing strange that in this day of enlightenment this statement by the greatest malefactor of history, who could frame no laws for any future day and generation, nor keep those made for himself, should be solemnly cited to justify the continuance of age-long injustice and degradation to one-half of the human race. The origin of such treatment was perhaps natural in the economic conditions of a barbarous age when superior physical force made the wife the slave of the husband. But those conditions have passed. All the conditions and customs of life have changed. Many laws have become obsolete, even when not changed by statute, and by the Constitution of 1868, as this has been, and no principle of justice can maintain the proposition in law, or in morals, that a debauchee, as the defendant admits himself to be, can marry a virtuous girl and continue his round of dissipation, keep up his intercourse with lewd women, contracting, as he admits, venereal disease, communicate it to his wife, as the jury find, subjecting her to humiliation, and ruining her physically for life, and seeking to run off with all his property, abandoning her to utter indigence: yet be exempted from all liability by the assertion that he and his wife are one, and that he being that one, he owes no duty to her of making reparation to

her for the gross wrong which he has done her.

It must be remembered that there is not and never has been, any statute in England or this state declaring that "husband and wife are one and he is that one." It was an inference drawn by courts in a barbarous age based on the wife being a chattel, and therefore without any rights to property or person. It has always been disregarded by courts of Equity. Public opinion and the sentiment of the age as expressed by all laws and constitutional provisions since have been against it. The anomalous instances of that conception which still survive are due to courts construing away the changes made by corrective legislation or restricting their application.

Whether a man has laid open his wife's head with a bludgeon, put out her eye, broken her arm, or poisoned her body, he is no longer exempt from liability to her on the ground that he vowed at the altar to "love, cherish, and protect" her. We have progressed that far in civilization and justice. Never again will "the sun go back ten degrees on the dial of Ahaz": Isaiah 38:8.

Wives are no longer chattels. There are half a million women voters in North Carolina. They do not need to beg for protection for their persons, their property, or their characters. They can command it.

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### GIVE THE YOUNG MOTHER A CHANCE

VERA COBER ROCKWELL

It was six years since I had last seen Nellie, six long years, and now—grandmothers! It seemed too ridiculous! Why, it was only yesterday that we were blue-ginghamed babies together, climbing, in spite of thick, pudgy legs, and parental protests, over the high, awkward fence that separated our homes. What fast little friends we were as schoolmates and later, how happy as young brides and mothers! Our friendship had never wavered an instant since the blue-ginghamed hours

of that yesterday, and now—grandmothers!

To prove it, there in the open doorway stood Nellie, a lovely wide-eyed grandson on her arm, who gravely watched my suitcase as I, in spite of my fifty years, almost ran up the porch steps. She was the same old Nellie—I could tell that at a glance—with dancing black eyes, dimpled cheeks, and hair only a wee bit gray. How my heart leaped at the sight of her! And that dear baby!

"Elinor is gone for the day," she replied to my query about her daughter, "so I am playing nurse."

"Isn't that fun!" I rejoined enthusiastically. "I always feel like a young, new mother when Virginia gives me that privilege. Baby Marjorie and I get on famously together. She's the happiest little thing—just ten months old today."

"She must be a darling!" exclaimed my old chum, as she led me into the cozy living room, motioned me to a chair, and plumped the baby down in my arms. "Gordon and I have a great time, too," she laughed. "Don't we, honey?" The little fellow gurgled, and jumped in ecstasy as Nellie bent over him in play.

"When the cat's away, you know!" and she winked knowingly at the baby. Then catching my puzzled look she explained gaily, "Elinor is fussy with her baby, Jane—positively fussy. She's so strict with his diet, and sleeping hours, and all, and it's such nonsense. Why, if she were here, baby would be in bed fast asleep this very minute and not down at the door to welcome Auntie Jane, whom he's never seen before, bless her!"

"Nellie!" I gasped in astonishment, "You didn't keep him awake just for me, when you knew I came prepared to spend a week with you!"

"Oh, no," Nellie answered, lightly. "I didn't keep him up, but I did awaken him when I heard your train coming in, and slipped another dress on him. He had slept enough to last him till night, anyway."

"Now listen, Nellie," I admonished her, half jestingly, half seriously.

"Don't you ever wake that baby up again for me. He needs every bit of sleep he can get. Besides," I added, with a laugh, "I can assure you I would never return the compliment for you."

"Oh!" said Nellie, with quick sympathy, "Is Virginia fussy, too?" and then, not waiting for my answer, placed Gordon in his play-yard. "Now be a good boy for Auntie Jane," she coaxed, "and we'll get her some luncheon in a hurry."

At table, Gordon sat in state in his handsome high-chair.

"He's beginning young," I remarked, as Nellie fastened a snowy napkin around his neck and prepared to feed him. "He isn't eight months old yet, is he?"

"Next week, the twentieth," explained my hostess. "We don't give him much besides his milk. Elinor feeds him every three hours, and then in between times I insist, in the face of her protests, that we give him old-fashioned pap, milk thickened with cornstarch, you know. I used to feed it to Elinor, so, of course, it's all right. Then when he sees us eating, naturally he wants to eat, too, so we give him—or rather I do—a little piece of bread to keep him quiet. Elinor did not want to begin feeding him solids yet, but I told her she was foolish to put it off any longer—he has to begin sometime—and he might as well be starting little by little. So now she lets me go ahead with the pap, and days like this when he and I are alone, he gets a little taste of everything, and nobody's the wiser. Now this scalloped potato is so tender and tasty, I know he'll like it," and she put a small bit between the baby's eager lips.

To see that darling baby, without a tooth in his head, rolling the potato around in his little mouth, and then swallowing it whole, to see him choking over wads of soft bread, was shocking to me. My appetite that had been so keenly whetted by the odor of Nellie's cooking, fled. I wanted to protest, and yet I did not want to hurt dear old Nellie. But I could not keep still.

"Nellie," I said, and she looked up in surprise at the pleading note in my voice. "Nellie, dear, don't you think you are taking a terrible responsibility upon yourself?"

"How?" she asked in astonishment.

"Well—in imposing your ideas upon Elinor. It's her baby. Why should she not have the privilege of bringing him up as she wishes. You brought yours up—"

"As my mother wished," interposed Nellie, quickly.

"Yes, and very probably she brought hers up as her mother wished," I continued. "Don't you see what that means? We've been using home-grown and ingrown methods of culture for our babies for years. It is only recently that there have been physicians who realized the need of specializing in the development and growth of children. Don't you think it smacks of Chinese ancestor worship to cling so stubbornly to the old ways instead of admitting possible good in the modern ways? Aren't you willing to try out the new ways?"

"Jane!" exclaimed Nellie, in growing astonishment. "You amaze me! Those Red Cross lectures you have been going to have certainly put a lot of new notions into your head, and style, too! But I see what you mean. At the same time I've got a pretty fair specimen of the good old way in Elinor. She is so strong and healthy."

"Has she lost her old nervousness?" I could not help asking.

"No—she's extremely nervous," admitted Nellie. "But you can't say that was due to my feeding."

"No—I cannot say so; but disorders of the stomach so quickly affect the nervous system that we cannot say definitely that it was not that until we prove positively that it was something else. Don't you see? In the same way I cannot prove that the sick headaches Virginia has been subject to all her life were not the result of my ignorance of how she should have been fed. The whole thing resolved itself into this: If Elinor rears her child by careful feeding and modern methods and then discovers he has some weakness or

other, at least she knows that she is not to blame—she has done her best. And if you have not interfered, you too, are blameless."

Here I hesitated a moment. It was hard to give utterance to that which had lain voiceless within my heart for so many years—but I felt that I must drive the point home.

"Nellie," I said softly, "You remember my baby boy? You remember he was just a year and a half old. Did you know—" again I paused. The hurt of it was so poignant, so fresh after all these years, and it seemed somehow traitorous and unfilial to tell the story. "You did not know," I began again, "that it was my mother's insistence upon wrong methods of feeding him that took him away from us? Poor, dear mother! She worried and grieved over her interference all the remainder of her life. I was young and inexperienced, she thought her way was best, and I followed her advice."

Nellie's cheeks paled as she looked at me with startled eyes.

"Poor, dear Jane," she said, after a pause.

"And poor dear mother!" I said again. "The fault was not hers after all. How could she know? It is so recently that mothers have been given intelligent solutions of their problems. In earlier times people did not have such sources of expert knowledge as we now have in magazines and handbooks, and as specialists can give. For the most part, I believe young mothers today are eager to look around and absorb this knowledge, but in far too many cases we older mothers won't give them a chance. Does it seem fair, Nellie?"

And Nellie, who was always the frankest, finest pal anyone ever had, said quite candidly, "No, Jane. I believe you are right. Only I am just a wee bit jealous because I did not figure it out for myself—*From Mother and Child.*

## PERMANENT PROTECTION AGAINST DIPHTHERIA

BY ALBERT SNEDES ROOT, M.D.

In this day of progress every one recognizes the value of antitoxine in diphtheria, not only in cases where diphtheria has already developed, but in preventing the disease from occurring in those who have been intimately exposed to it. Unfortunately neither the disease itself nor antitoxine will protect the individual for any great length of time, and upon being exposed to an active case six months or a year later he may again contract it.

Within the past five years there has been discovered a means by which one may gain protection against diphtheria, probably for a life time.

The preparation used for this is called toxine-antitoxine, and by giving a small quantity of this (about 15 drops) under the skin by means of a hypodermic needle each week for three doses, the child will develop an active immunity against the disease so that even though exposed he will not contract it. The injection of this substance does not usually make the child sick at all, sometimes there is slight fever for 12 to 24 hours, but not as much as when typhoid vaccines are given.

In spite of the use of antitoxine in diphtheria there is an annual death rate in the United States of about 23,500, almost equal to the combined deaths from scarlet fever and measles. A majority of these deaths are among children under two years of age, who are especially apt to have the laryngeal type, commonly known as membranous croup.

There is no excuse now for this great loss of life, and the public should know that there is a means of permanently protecting one's child against this dreaded disease, just as truly as there is a means of protecting against typhoid fever by the use of typhoid vaccines and against smallpox by the use of smallpox vaccines.

There is a test called the Schick test by which it can be told whether or not an individual is susceptible to

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Life is a battle with dirt. Keep up the fight. There can be no loss in keeping clean.

diphtheria. Over 90 per cent of children who were rendered nonsusceptible to the disease by toxine-antitoxine five years ago still are nonsusceptible, as shown by the Schick test. We have found out by this test the age at which diphtheria is most apt to occur. The danger period is between six months and five years. After this one's susceptibility decreases with age, so that when adult life is reached between 90 and 95 per cent of people are immune, that is are naturally protected against it.

In order to stamp out diphtheria as completely as is smallpox we have but to follow this rule. Every child between six months and five years of age should have three doses of toxine-

antitoxine. One cubic centimeter (about 15 drops) should be given under the skin by a hypodermic needle at each dose, regardless of the age of the child. This should be repeated each week until the child has had three injections. Children between five and fifteen years of age should have a Schick test made upon them and those who are found to be susceptible should receive toxine-antitoxine.

It should be a part of the public health work in every community to see to it that this is carried out in the public schools. The toxine-antitoxine and Schick test outfits may be procured from the New York Department of Health at a nominal cost, or from some of the commercial laboratories.

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## THE USE OF AIR

BY W. S. RANKIN, M.D.

### VENTILATION: THE COMING OF THE WIND

#### Effects of Ventilation

If a perfectly comfortable, rested, cheerful, alert, and reasonably energetic person comes into a small closed, room, especially if the temperature of the room is above 70, there will gradually develop a disinclination to either mental or physical effort, a little dullness, perhaps a slight depression of spirits. The longer the person remains, the smaller the room, the higher the temperature, or the more persons in the room, the more pronounced the aforementioned effects and the sooner will there develop a distinct sense of discomfort, some headache, faintness, and nausea. In extreme form the effects of insufficient ventilation or close air space are well stated in the following description, borrowed from Professor Lee, of Columbia University, of what happened in the tragedy of the Black Hole of Calcutta:

"On one of the hottest of the hot nights of British India, a little more than 150 years ago, Siraj-Uddaula, a youthful merciless ruler of Bengal, caused to be confined within a small cell in Fort William, 146 Englishmen whom he had that day captured in a siege of the city

of Calcutta. The room was large enough to house comfortably but two persons. Its heavy door was bolted; its walls were pierced by two windows barred with iron, through which little air could enter. The night slowly passed away, and with the advent of the morning death had come to all but a score of the luckless company. A survivor has left an account of horrible happenings within the dungeon, of terrible strugglings of a steaming mass of sentient human bodies for the insufficient air. Within a few minutes after entrance every man was bathed in a wet perspiration and was searching for ways to escape from the stifling heat. Clothing was soon stripped off. Breathing became difficult. There were vain onslaughts on the windows; there were vain efforts to force the door. Thirst grew intolerable, and there were ravings for the water which the guards passed in between the bars, not from feelings of mercy, but only to witness in ghoulish glee the added struggles for impossible relief. Ungovernable confusion and turmoil and riot soon reigned. Men became delirious. If any found sufficient room to fall to the floor

it was only to fall to their death, for they were trampled upon, crushed, and buried beneath the fiercely desperate wave of frenzied humanity above. The strongest sought death, some by praying for the hastening of the end; some by heaping insults upon the guards to try to induce them to shoot. But all efforts were in vain, until at last bodily and mental agony was followed by stupor. This tragedy of the Black Hole of Calcutta will ever remain as the most drastic demonstration in human history of the bondage of man to the air that surrounds him."

To reverse the picture, a person who is suffering from the effects of diminished air space, when brought into cool, commodious, and moving aerial surroundings is at once revived, nausea disappears, if it existed, the headache subsides, there is no longer any dizziness or faintness, the spirits revive, the person becomes cheerful, alert, and interested and ready for ordinary mental or physical exertion.

### The Cost of Poor Ventilation

As pointed out on other occasions, it is not those taxes suddenly imposed and with overwhelming and tragic effect upon the vitality of relatively small numbers, as in the fatal Black Hole incident, that are of any real consequence, but those taxes on the vitality of great masses of people imposed to such a slight extent and so gradually as not to cause a reaction. Human nature reacts instantly and effectively against an excessive tax on life or purse, but condones and adjusts itself to an injury gradually imposed over long periods of time. There is a natural law to the effect that a stimulus must have a certain intensity in order to produce a reaction; hence the paradox that those injuries that hurt us least, injure us most. We lose our lives, our vital surplus, as we lose our money, our bank account. The bank does not suddenly fail, leaving us complete bankrupts, but we waste the money gradually, in small and useless expenditures, over a period of years. And so it is with our vital surplus. Deaths from violence, accidents, rare

and spectacular diseases, are comparatively infrequent. We die from the effects of minor injuries and long continued, unhygienic, and unsanitary practices. We waste our vital surplus as our financial surplus, in dribblés. The Black Holes of Calcutta occur but once in centuries, and it is only now and then that we read of a person being suffocated—usually an infant from being lain upon by the mother; on the other hand, the minor effects of insufficient air, of poor ventilation, going on from day to day, affecting not the few but the millions, in schools, mines, and factories, causing them to lose in productiveness and also in vitality (resistance to disease), from 5 to 10 or 15 per cent, in the annual grand total reach into billions of dollars and into the hundreds of thousands of lives.

### The Cause of Poor Ventilation

*The Theory of Diminished Oxygen Supply* was extensively held for many years. As an explanation of the effects of poor ventilation it was quite natural to assume that the continuous consumption of the oxygen of the air in respiration would bring about an impoverishment of the air in this vital constituent that would result in deleterious effects upon the body. Furthermore, it was known that a mouse placed under a small bell jar dies from oxygen starvation, and that occasionally men in the manholes of sewers and in the depths of mines died because of an absence of oxygen. Such deaths, however, were known to be rare, while the evil effects of ventilation were known to be frequent. Furthermore, a study of the percentage of oxygen in the air in rooms where both the conditions and effects of poor ventilation were evident has shown that under such conditions the percentage of oxygen in the air is never less than 20 (the normal per cent is 20.94). It was known, too, that in the mines the percentage of oxygen was frequently kept down to 17 in order to prevent explosions and without evil effect upon the workers. Still further evidence against diminished oxygen supply as the cause of poor ventilation was seen in the good health,



and even the exceptional vigor, of people living at high altitudes—in some places (the City of Potosi, in the Andes, for example) where the air was so rare or light as to have a pressure which gave the oxygen supply an equivalent of only 13 per cent. Finally, it has been shown that the percentage of oxygen may be reduced at least one-half, to about 10 per cent, without perceptibly injurious effects. Below this point there is difficulty in breathing and when the oxygen supply is reduced to 6 or 7 per cent, about one-third of the normal supply, there is convulsions and death.

In conclusion, the important point to be remembered, in this connection, is that a diminished oxygen supply does not serve as a plausible explanation for the evil effects of ventilation, for the reason that in rooms where ventilation is known to be poorest the percentage of oxygen is never found to be under 20 per cent, and, other conditions being favorable, we know that the percentage of oxygen may be very much reduced without injurious effects.

*The Theory of Excessive Carbon Dioxide* as the cause of poor ventilation is still widely held. Recent textbooks give an excess of carbon dioxide in the air as the agent producing the symptoms associated with insufficient air supply. When attention was first directed to carbon dioxide in its relation to ventilation it was considered as an index, a means of measuring the vitiation of the air by the breath, and not as the explanation of the effect of diminished air space. Subsequent studies advanced its importance to that of cause instead of simply an index of poor ventilation. We now know that as oxygen is never so deficient under ordinary conditions as to explain the effects of poor ventilation so carbon dioxide is never so excessive under ordinary conditions as to explain the symptoms. Ordinarily there are four parts of carbon dioxide per 10,000 parts of air. No evil effect whatever arises from breathing air in which there are 100 parts of carbon dioxide per 10,000—25 times the ordinary amount. Persons may be kept for considerable periods of time in very

small chambers, 180 cubic feet per person, in which the carbon dioxide accumulates from 25 to 200 parts per 10,000 parts of air and without suffering any disagreeable effects, provided the air in the small chamber is kept cool and changed slowly. In certain parts of breweries there are 200 parts carbon dioxide to 10,000 parts of air and no ill effect is noticed except a slight increase in the depth of breathing. With 300 parts of carbon dioxide per 10,000 parts of air there is a slight increase in the rapidity of breathing; with from 500 to 1,000 parts per 10,000 there is difficult breathing and death follows when the carbon dioxide rises to 4,000 or 5,000 parts per 10,000, practically one-half.

In conclusion, the excess of carbon dioxide found under ordinary conditions of bad ventilation is not in itself sufficient to explain the disagreeable feelings that follow.

*The Theory of Organic Effluvia* intruded itself into the consideration of the cause of poor ventilation when it became quite clear that the effects could not be related to either deficient oxygen or excessive carbon dioxide. Bad odors, due to decomposition of organic matter in the mouth, on the skin, and in the clothes, suggested that such effluvia in amounts appreciable and in amounts unappreciable might be the cause of the disagreeable effects of close air supply. These effluvia of uncertain composition have been spoken of as "crowd poison." Experiments in condensing the moisture of the breath and injecting it into animals have been without effect. Other experiments, in forcing animals to breath expired air in concentrated form have been without effect, provided the air about the experimental animals was kept cool and in motion. Moreover, animals subjected to the disagreeable odors from putrifying flesh and excreta show a normal growth curve and no loss of resistance to infectious germs. To make a long story short, no experimental evidence has been produced in support of the theory that the ill effects of poor ventilation are due to effluvia from the body of mysterious composition.

*The Facts, Not Theory, of Temperature and Humidity:* As far back as 1883 it was suggested that the ill effects from poor ventilation were not due to any of the aforementioned causes, to wit: the deficient oxygen, excessive carbon dioxide, or organic effluvia from the body, but were due to temperature and humidity in such excess as to derange the heat regulating mechanism of the body. In 1905 there was a considerable amount of work done which tended to substantiate the idea of temperature and humidity as the cause of the effects from poor ventilation. This early work has been confirmed and extended by subsequent investigators and all these workers are agreed that the ill effects of ventilation are due to temperature and humidity, as shown in many experiments similar in general character to the following:

From six to a dozen men inclined to be cheerful, active and energetic, mentally and physically, are placed in a small, closed chamber and kept there for several hours. After a short time they become less talkative, less interested in their surroundings and depressed. Still later the depression deepens, some of them have a slight headache and feel faint, in short all the evidences of poor ventilation manifest themselves. These men are now permitted to place their faces in masks connected with the outside air by a large tube and to breathe freely of the outside air. No change whatever in their condition takes place, even after an hour or so and their symptoms of bad ventilation become more aggravated. At the same time that the men in the chamber begin to breathe outside air through tubes an equal number of men in outside air, through masks and tubes, breathe the inside air of the chamber without any noticeable change in their feeling or actions. The experiment so far seems to indicate clearly that it is not the air breathed that produces the ill effects of bad ventilation. If, now, electric fans placed in the chamber are set in motion the spirits of the men in the chamber re-

vive, their headache and depression disappear, they become cheerful and interested in their surroundings. In short, all the ill effects of bad ventilation disappear. Experiments like the above, performed many times and by many investigators, have consistently demonstrated that it is not the air that we breathe that produces bad ventilation but the temperature and the humidity of the air about our bodies.

In conclusion, to quote Professor Lee, "bad ventilation is physical, not chemical; cutaneous, not respiratory."

The next article on the "Use of Air" will deal with the effect of temperature and humidity, explaining the way in which these conditions impair the functions of the body.

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### A DEFINITION OF SANITATION AND HYGIENE

"In the battle of life, just as in actual warfare, there are two great forces brought into action—offensive and defensive. Sanitation may be compared to the former, and hygiene to the latter. In sanitation we wage an active crusade against the germs of disease—we burn them with fire, we poison them with antiseptics, we demolish their strongholds of filth, and in every way actively pursue them to their death. In hygiene we strengthen our fortifications and look after the well being and equipment of the garrison, so that we can resist almost any attack. The human system is supplied with those defensive forces known as the power of resistance or immunity, and by obedience to the rules of hygiene—of right living—they insure us against many attacks of disease."—*Dr. R. H. Lewis.*

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The enemies of life and health are always ready to attack the weak and unguarded places in your physical armour. Knowledge of health laws is one of your strongest lines of defense. For having health knowledge you are forewarned, and thus you are forearmed against the foes of health.



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## A THOUGHT FOR THE YEAR

**J**OHNS GALSWORTHY entreats us not to "drag the hands of the world's clock backward" by our neglect of the health of mothers and babies. He says:

"How do things stand? Each year in this country about 100,000 babies die before they have come into the world; and out of the 800,000 born, about 90,000 die. Many mothers become permanently damaged in health by evil birth conditions. Many children grow up mentally or physically defective. One in four of the children in our elementary schools are not in a condition to benefit properly by their schooling. What sublime waste! Ten in a hundred of them suffer from malnutrition; thirty in the hundred have defective eyes; eighty in the hundred need dental treatment; twenty odd in the hundred have enlarged tonsils or adenoids. Many, perhaps most, of these deaths and defects are due to the avoidable ignorance, ill-health, mitigable poverty, and other handicaps which dog poor mothers before and after a baby's birth. One doesn't know which to pity most—the mother or the babies. Fortunately to help the one is to help the other. \* \* \*

"There are many districts all over the country where there are no centers to come to; no help and instructions to be got, however desperately wanted. Verily this land of ours still goes like Rachel, mourning for her children. Disease, hunger, deformity, and death still hound our babies, and most of the hounding is avoidable. We must and shall revolt against the evil lot, which preventable ignorance, ill health, and poverty bring on hundreds of thousands of children.

"It is time we had more pride. What right have we to the word 'civilized' till we give mothers and children a proper chance? This is but the Alpha of decency, the first step of progress.

"Into the twilight of the world are launched each year these myriads of tiny ships. Under a sky of cloud and stars they grope out to the great waters and the great winds—little sloops of life, on whose voyaging the future hangs, they go forth blind, feeling their way. Mothers, and you who will be mothers, and you who have missed motherhood, give them their chance."

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## SERVICE

The State Board of Health offers to the people of North Carolina, without charge, the services of experts thoroughly trained with particular regard to the needs of this State. Advice will be given promptly upon any question affecting the public health. Address any inquiry to the State Board of Health, Raleigh.

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The State Board of Health has prepared special literature on a large number of subjects which are offered without charge. If you are interested in any one or more subjects affecting your health, write the State Board of Health, Raleigh, requesting special literature, and it will be sent to you.

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## NORTH CAROLINA LEADS IN BIRTHS

North Carolina now leads the entire United States with the highest birth rate in the Union, according to statistics for 1920, compiled by the State Board of Health. At the same time this State has one of the lowest death rates.

Reports during the past year show a total of 83,966 births in the State, a rate of 32.8 per thousand. The deaths totaled for the same period 33,228, a rate of 12.9 per thousand. These figures do not include the still births, which amounted to 4,171 for the year.

During 1920 every six minutes a new life was born into the world; every fifteen minutes another life was snapped off. That the births are so far in excess of the deaths accounts for the large increase in the population of the State during the last decade, as shown by the last census figures, for the State has had little increase by reason of immigration.

A comparison for the past three years shows the following: 1918, total births, 76,175, or rate of 30.8, and total deaths, 42,411, or rate of 17.6; 1919, total births, 69,791, or rate of 29.3, and total deaths, 30,114, or rate of 12.4. The very high death rate for 1918 was caused by the epidemic of influenza, and this probably also accounts for the lessened rate of both births and deaths during the following year of 1919. In 1920 the birth rate went forward considerably while the death rate shows a difference of only five per hundred thousand.

North Carolina has been exceeded in birth rate heretofore only by Utah, which, in 1918, had a rate of 31.9. The rate for the entire registration area of

the country the same year was 24.4. For the same year the death rate for the same area was 18.2.

## "CERTIFIED WATER"

Within the last twelve months the danger to railway travelers of infection with typhoid fever, dysentery, and other water-borne diseases has been reduced to a minimum throughout the greater part of the country by the co-operation of the U. S. Public Health Service with the different State boards of health in the testing of the water used on railway trains for drinking and cooking. And, within the next few months similar protection will be afforded to passengers on river and lake steamers and to ocean steamships sailing from American ports. This will tend to end the severe outbreaks of typhoid fever that have from time to time been traced to ships (especially to excursion boats) as well as to the probably more numerous but far less easily traced illnesses of railway travelers from similar pollution.

"The work," said Surgeon General Cumming, of the U. S. Public Health Service, "was really begun in June of last year, when at the convention of State and Territorial Health Officers, in session at Washington, D. C., a plan was decided upon whereby the Service was to coöperate with the states in reducing typhoid fever either by sending them sanitary engineers to investigate their water supplies or by helping them to organize State divisions of sanitary engineering to look after the work."

"Work has since been done in nearly half the states of the Union, in many of which sanitary divisions were lacking. In nearly all of these such bodies have been or are now being organized;

and in about half of them surveys have been made of many or all important water supplies, most of which have been found safe for use on trains. Periodic inspection is, however, of course, necessary."

"In carrying out this work the Public Health Service has grouped the states east of the Mississippi River into four districts and it will group those west of the Mississippi into five other districts as soon as may be practicable. Each district will be provided with a sanitary engineer from the Service, who will render aid to the State sanitary officers in his group when requested."

In North Carolina this work has been in progress for several months, a member of the staff of the State Laboratory of Hygiene being entrusted with the duty of making investigations and certifying the sources of supply of water used on trains operated within the State.

#### THE TUBERCULOSIS CLINIC

The State Board of Health, the North Carolina Tuberculosis Association and the physicians of the State have during the past year coöperated in the conduct of a number of tuberculosis clinics, held in many different sections of the State. Few undertakings in public health work have proved as popular, or more thoroughly demonstrated their value.

The plan of work has been simple. An expert diagnostician has been supplied through the North Carolina Tuberculosis Association. A nurse as his assistant has been furnished by the Bureau of Public Health Nursing and Infant Hygiene of the State Board of Health. The local county public health nurse and the physicians of the several communities have united in assisting in making the examinations a success.

When a person affected with tuberculosis has reached that stage of the disease where the signs of it are so plainly imprinted upon the frame and countenance that there is no mistaking the cause of the trouble a point has been reached where the chances are largely against a cure being effected.

On the other hand, when the presence of the disease can be discovered in its incipency or earlier stages there is a very good chance that a cure can be effected. It is for this reason that the endeavor is being made to supply a service to the people of the State by which such cases may be discovered.

One of the most recent clinics held was at Kinston, Lenoir County. Speaking of the clinic there the *Free Press*, the Kinston afternoon newspaper, says:

"The Tuberculosis Clinic for Lenoir County has just closed after several days spent in investigation at two points in the county. The clinic was conducted by Dr. Spruill, a specialist from Sanatorium, and Miss Marion Manning, a trained nurse from the State Department of Health. Clinics scheduled for the county had to be abandoned on account of bad roads, except for Kinston and LaGrange, where access could be had by railroad.

"The report shows that 130 examinations were made of men; women, and children. Diagnosis showed that 17 of those examined gave positive evidence of having tuberculosis and 97 were discharged as free from the disease. In the case of one the disease had been arrested; 5 were classed as doubtful, 6 were said to be probable glandular, 3 probable, 1 doubtful.

"Eight of the cases examined were advised to go to Sanatorium for treatment, 1 for X-Ray diagnosis, and 4 for further examination. Nineteen were advised to have their temperature carefully recorded, 20 to have sputum examined, 4 to have tonsils and adenoids removed, 4 to have tonsils removed, 1 to consult a throat specialist, 1 for hookworm examination, 31 advised to sleep in the open, 5 to take rest in bed, 4 to rest as much as possible, 15 to have milk added to their diet, and 18 to take milk and egg diet.

"The county health department paid the expenses of the clinic. It is a compliment to Miss Nettie Simpson, our county health nurse, that the visitors declared the clinic to be the most successful yet arranged by a county health nurse.

"The clinic emphasizes the necessity of the State making adequate preparation for the treatment and prevention of tuberculosis. The Kinston Rotary Club has gone on record as asking the General Assembly to authorize this step; and it appears quite probable that action will be taken to this effect. In fact the \$20,000,000 bond issue that educational leaders are now urging has in view the enlargement of all the State's institutions, charitable as well as educational."

### LITTLE DANGER FROM TYPHUS

Last year there were in North Carolina several sporadic cases of typhus fever. Two deaths were reported during the year from this cause. Within the past few weeks there have been many alarming reports sent out from New York, and printed in the newspapers of the State, with regard to the presence of typhus fever among immigrants arriving in this country and the danger of its spreading to other sections of the country. As a matter of fact there is no reason for any fear of the spread of this disease over the country.

In view of the extraordinary publicity given the typhus situation at New York, and the erroneous impression which has been created in the minds of many, the following statement of facts has been made by Surgeon-General Cumming, of the United States Public Health Service:

"The menace to this country from the introduction of typhus from Europe is not of recent development and is no greater today than it was six months ago. Even before the armistice the Surgeon-General recognized the potentialities of the disease spreading to the United States if adequate precautionary measures were not taken when immigration was resumed. During the past year medical officers of the Public Health Service have been stationed at American Consulates at chief European ports of embarkation to supervise measures to be applied against ships and passengers for the prevention of the spread not only of typhus, but also of plague and cholera. While the

measures enforced at the European ports have by no means been perfect their value is indicated in the fact that several hundred thousands immigrants have come from typhus-infected areas on several hundred ships and that out of all this number typhus infection occurred only on eight vessels. With the exception of the *S. S. Presidente Wilson*, which arrived at New York on February 1, infection on the ships was detected by the quarantine officer at New York and effective precautionary measures applied. Upon arrival of the *S. S. Presidente Wilson* at New York there were three cases in the sick bay of what the quarantine officer diagnosed as broncho-pneumonia but which later proved to be typhus. The doctor was experienced in the detection of typhus, but the cases presented no eruption and the mistake was by no means inexcusable. Still under the custodial care of the immigration authorities the sick people were sent to the Long Island College hospital, which takes care of sick immigrants, and the correct diagnosis later became apparent. Fortunately the error was discovered before the other passengers in the steerage were released, and the vessel and the immigrants were remanded to quarantine and appropriate treatment applied to prevent the spread of the infection. The incident was unquestionably deplorable, but it indicated neither a breakdown of the New York quarantine station nor any unreasonable laxity.

"The system of quarantine protection developed by the Public Health Service consists of a double line of defense, first the medical officers at foreign ports who supervise preventive measures specified in the United States quarantine regulations, and, second, the facilities at United States quarantine stations. If infection evades the first barrier the ship still has to undergo inspection and treatment at her American port of arrival.

"Several weeks before the arrival of the *S. S. Presidente Wilson* the Surgeon-General had taken very definite steps to strengthen the quarantine defense at European ports by having

American consular officials instructed, through the State Department, to withhold bills of health from vessels whose passengers had not been satisfactorily disinfected. As early as January 17 quarantine officers at Atlantic ports were advised that on account of the unsatisfactory delousing procedure carried out at Danzig all passengers arriving at their ports should be held in quarantine and treated for the destruction of vermin. It must, therefore, be evident to any fair-minded person that the Federal health authorities have been most diligent in carrying out anti-typhus measures, and that any statement that either the Federal Health Service or the State officials of New York have been derelict or indifferent to the typhus situation is obviously untrue. Nevertheless administrative efforts of this sort cannot be expected to be perfect or to eliminate mistakes by individual officials.

"Typhus is not transmitted by lice in general, but only by lice that have previously bitten persons infected with typhus. A louse is by no means an exotic insect, as one might infer by some of the interviews in New York papers. It is widespread throughout the United States, but is found chiefly in the slum districts of large cities. In the absence of typhus it is of no sanitary significance or danger, so far as the present situation is concerned. Typhus fever develops in four to twelve days, and it is readily apparent to any trained sanitarian that if cases do not develop within this period it can safely be asserted that the infection is not present. This applies particularly to overseas vessels that have been out twelve days or more.

"Much confusion has resulted from the statements in newspaper interviews in New York City as to responsibility of the Immigration Service at Ellis Island for the exclusion of typhus fever. Immigration officials are not vested with any authority administering quar-

antine laws. Furthermore they have no equipment for enforcing quarantine measures—naturally so because they have control over aliens and not over citizens of the United States, although the latter returning from Europe are just as serious a menace from the typhus standpoint as is an alien. It is true that Ellis Island has always proved a valuable line of second defense for the port, but the responsibility for the exclusion of typhus and other quarantinable diseases rests solely upon the quarantine authorities. As a matter of ordinary decency and personal hygiene delousing facilities should be provided at Ellis Island, but since the prevention of the introduction of typhus relates to returning citizens as well as aliens, the quarantine station is the one place where effective preventive measures can be carried out.

"As to the statement that 'one infected immigrant might spread a plague that would cause a million deaths in six weeks in New York' it is interesting to note that, while not generally known, typhus fever has existed in New York City for years. About 1910 Dr. Nathan Brill recorded a series of somewhat less than 200 cases which he had observed in the previous ten years, and during 1911 34 such cases occurred in New York City, and others have occurred from time to time since that date. For the most part they were of isolated occurrence and indicated that conditions in New York City were not conducive to any serious spread of the infection. Goldberger and Anderson of the United States Public Health Service, in 1911, demonstrated by laboratory tests that the so-called 'Brill's disease' was identical with old-world typhus; that the clinical manifestations were very similar but much milder in type, that the disease was transmitted by the louse in the same way as old-world typhus, and while not so virulent, sometimes resulted fatally."



# DOES YOUR COUNTY HAVE A PUBLIC HEALTH NURSE?

BY ROSE M. EHRENFELD, R.N., DIRECTOR BUREAU OF PUBLIC HEALTH NURSING  
AND INFANT HYGIENE

"Bureau Public Health Nursing and Infant Hygiene" read the little elevator boy from a door at the State Departments Building, as he inquired, "What does that mean?"

"That means this is a department of the State Board of Health," replied one of the clerical assistants.

"Are you a nurse?" he asked.

"No, I look after the babies and send literature to their mothers."

"What does Miss E— do?"

"She has charge of the Bureau."

"Well, where are the nurses?" he questioned.

"They're out in the field," was the reply.

With a half-satisfied "Oh" he walked to the elevator and some hours later, when about to leave the building, the clerk was confronted with, "Say, where is the field?"

"The field" is rightfully defined by the boundary line of the State, and as one hundred counties, although only twenty-five are at present provided with a public health nurse, as both rural field and the bureau are "young, but promising."

Frequent inquiries of "How can we get a county nurse?" "How is the work administered?" "What does she do?" etc., are received, and the attempt is here made to answer these inquiries.

The counties having such workers were not determined by choice or partiality, but by the counties themselves. Two things are necessary to secure a public health nurse: The county desiring such a worker must provide salary and transportation and should employ one whom the State Board of Health and Red Cross can endorse, viz.: qualified by a public health nursing course at one of the universities giving same, or schools for social work and public health meeting the standard of the National Organization for Public Health Nursing and American Red Cross.

(Both county and nurse share the protection of such preparation as in time the former would expect results the latter, if untrained in preventive medicine, public sanitation and hygiene, etc., would be unable to effect.) In all except two counties the work is financed by county Red Cross chapter funds, which represent free-will gifts of the people; and in authorizing expenditure of same there must be offered in exchange an equivalent in value. (A graduate nurse without public health preparation is no more an acceptable substitute than is a dentist for a health officer.)

## Administration

Administration and supervision are provided by the State Board of Health and American Red Cross, through a jointly established bureau, and the program of work based on the vital needs of the State is carried out on a county basis. When assigning a nurse for county work, should there be a county health department with full-time health officer, she is detailed for duty with such department and works under its direction. Although financed by chapter funds (or budget made up from several chapters or supplemented from other source) the worker and work come directly under the county health department and the chapter acts as a supplementary agency to the official health agency. This is ever the position of the Red Cross, whether in relation to State, county, or municipal health department. However, where no such department exists the county nurse is assigned to work under an advisory council (or nursing committee) appointed by the chapter financing the work. (It so happens the majority of the nurses are in counties without health departments, but they are never offered as a substitute for a health officer, but desire to create sentiment for such a development.)

Public health nursing is considered a vital educative function of a new democracy and I have recently defined the county public health nurse as "the missing link" (between health department and homes) and feel, if the vital needs of a rural state are to be met, it will necessitate this combination of teacher-social worker-nurse being supplied for 100 counties instead of 25, from a more permanent financial source than chapter treasuries upon which so many claims for their limited funds are made. In spite of the recent strides in preventive medicine the practical application in the homes of the people suffers a constant check because of "the missing link." Two of the counties have expressed their appreciation of the first year's demonstration (made possible by Red Cross funds) by assuming financial responsibility of the work, believing that public health nursing should become a public responsibility and supported by public funds. Many states have mandatory or permissive legislation regarding county public health nursing.

### What Does She Do?

(From an article elsewhere in the BULLETIN it would seem there is nothing she does not do, but it brings out the value of a worker more than the program usually undertaken by one worker to a county.)

When considering the State's vital needs, cognizance was taken of the 1917 births, totaling 69,791, offset, however, by 19,522 deaths under 5 years, of which 7,596 were under one year.

Cognizance was also taken of the 3,300 annual deaths from tuberculosis, which indicates thousands of cases ill in rural homes, and it was decided that if the county nurse is going to be a practical instrument in meeting the vital needs of a rural state, there must be included in her program definite units of work that primarily emphasize maternity and infant welfare and tuberculosis.

(The nurse spends a day at the Bureau office in advance of going to her county, and is acquainted with the organization of the State Board of Health, given a copy of the Compila-

tion of N. C. Public Health Laws, a copy of the Units of Work to be undertaken, and a list of midwives in her county, and is later furnished a list of reported cases of tuberculosis.)

1. The *County Public Health Nurse* as a *factor in reducing infant and maternity mortality*. She gets in touch with every midwife in her county, acquainting each with laws regarding midwifery, viz.: that

(a) Midwives must be registered with State Board of Health;

(b) Must report births;

(c) Must use silver nitrate in newborn babies' eyes;

teaching the midwife to fill out birth certificate—if able to write—and demonstrating the use of silver nitrate. (Surely every baby in North Carolina should be assured of protected sight and official cognizance of its birth, to which he is entitled.

In some counties group instruction, in others individual is given, and numerous illiterate, superstitious, and aged women, not registered, have been located.

The county nurse is a force in discouraging midwifery by emphasizing to the expectant mother the importance of medical supervision and attendance at confinement. By periodic visits she becomes acquainted with the expectant mother and is in position to note danger signals, to recommend early medical examination, urinalysis, etc., that avert a termination of pregnancy disastrous to two lives. (Possibly "THE Problem" confronting the public health profession today is the fact that more than 50 per cent of infants' deaths are due to causes affecting the mother before the birth of the child.) By registering such cases the nurse gives expectant mothers an opportunity to receive a series of advisory letters and other literature approved by the medical profession, which help her to safeguard a mother's welfare during this period of nature under a strain and give to a future citizen the best possible start in life. (In December and January 822 prenatal cases were registered, of which 403 were reported by county nurses, 49 by physicians, and 138 by women who had received such

literature themselves.) The nurse will instruct any expectant mother regarding preparation for confinement and is especially desirous of being of service to mothers of bottle-fed babies in demonstrating and teaching preparation of artificial feedings or formulae prescribed by physicians for individual babies; care of bottle and nipples, milk, etc., and in giving demonstrations of baby care; also making known the cause and prevention of summer diarrhea and importance of sanitary improvements. (In three years, 1916, 1917, and 1918, North Carolina returned an average death rate per 100,000 for children under two years of age, from diarrhea, of 85, as compared with South Carolina's 75.4 and Virginia's 64.2. Maine's rate dropped from 60.3 to 39.1 in two years and Indiana's from 62.6 to 47.1 in same time, showing what can be done.)

*This one unit* (of Infant Hygiene) in the county nurse's program will place a new slant on the prevalence of blindness, as well as maternity and infant mortality statistics of the State.

#### 2. *A Factor in Reducing Tuberculosis.*

By personal contact with the tuberculous cases in homes throughout the county the nurse suggests medical supervision (by the physician of their preference) to a large number of cases without such protection. She demonstrates bedside care and teaches members of the family to render similar service to the patient; how to protect themselves from infection and to use a thermometer. She makes known "early symptoms," disuse of patent medicines, etc., and in homes so visited finds many suspects who are desirous of taking advantage of the *rural tuberculosis diagnostic clinics*. The county nurses have worked up thirteen such clinics at fifty-two points in ten counties, which resulted in 1,403 examinations by a diagnostician from State Tuberculosis Sanatorium. A supervisory nurse from this bureau is sent for all such clinics and physicians in the counties and health officers coöperate in the interest of locating incipient tuberculosis which adds to the chances for recovery. By follow-up visits to the

homes the nurse encourages faithful continuous compliance with recommendations made. Tuberculosis pictures are shown by the nurse to schools throughout the county and talks on the subject are given.

#### 3. *How She Keeps Well Children Well.*

While emphasis is placed on tuberculosis and maternity and infant welfare, the preschool age children (who have not heretofore shared equal benefits with infants and school children) are included in her program. It is here that possibilities for even greater service are offered than for infant welfare, as the baby in the home has frequently one, two, or even three brothers or sisters of this age group—and the opportunities for nutritional work are many; also for advice concerning care of first teeth, protection from contagions, importance of vaccination, etc., etc., which have a direct bearing on the child's physical fitness to benefit from the opportunity for education which will be his a year or two later. The personal contact of the nurse in the home, aided by height and weight cards indicating the average gain of normal children, together with guiding diet sheets (supplied by this bureau for children of this age group) has been the means of securing splendid coöperation from mothers who gladly fall in with the plan of "keeping well children well."

#### 4. *Inculcating Health Habits.*

The county nurses have been a factor in inculcating health habits in thousands of children. In one county every school in the county has enrolled its pupils as Modern Health Crusaders. This daily systematically following the "rules of the game" will be the preventive measure that eliminates necessity for a lot of corrective work at a later age.

#### 5. *Health Teaching.*

In this connection some of the county nurses have been instrumental in teaching the teachers how to make the physical inspection of pupils required by law and, in their second year are giving "Home Hygiene and Care of the Sick" courses in the high schools in addition to similar instruction among

women throughout the county—thus preparing large groups of women to intelligently care for the sick in their homes (a service most women are sooner or later called on to render) and incidentally to meet epidemic emergencies.

One of the most gratifying pieces of infant welfare work undertaken has been "Little Mothers' Leagues"—a course on "baby care" for girls over twelve years. Upon completion of ten lessons the girls are given a L. M. L. pin and certificate furnished by this bureau—the latter being signed by the county nurse. Thus little girls are encouraged in rendering in their homes intelligent assistance in the care of the younger children, and incidentally future mothers are being better prepared for greater and graver responsibility which will later be theirs.

The nursing profession has always appreciated the confidences of the sick room and homes with which they so intimately come in contact; for which reason the *greatest* need for work of the nature described in this article I hardly feel privileged to discuss, but I should like to ask—not for our own profession, but for the most sublime profession in the world, that of motherhood, which gave to North Carolina in 1920 83,966 new citizens—that cognizance of the welfare of our women and babies be given a greater degree of intelligent consideration.

Should the problem of tuberculous infected cattle be more intelligently considered than the problem of the tuberculous mother (in the home and without knowledge of protection) breast-feeding the baby? Should there be considered provision for the expectant mother in the barnyard in a proportion not complimentary to the State when compared with the need for provision for its most valuable resource—its child life?

Just as we feed our bodies thoughtfully in order that they may sustain our thought—so should the State provide for the welfare of its unborn citizens in order that the citizens of the future may survive to protect the future welfare of the State.

Are the vital needs of your county being met?

Is there a "missing link"?

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## FATIGUE

BY DR. HUGO MUENCH

In these enlightened days, when the proud father of the family stays home from church on Sunday mornings to tinker with the flivver, there are mighty few of us who don't know enough about machinery to tell the spark plug from the radiator and use profusely illustrated language while trying to get an undersized tire on an oversized rim. True—we don't think of our bodies as machines. But they have all the essentials of the most complicated motor cars. And, speaking of fatigue—did you ever have your Lizzie lie down and go to sleep when you were trying to make the 5:15? Oh, man!

Fatigue is caused by two things: First, the using up of the power that is in the muscle which is working; second, the poisons which are produced by the action of the muscle. The first is the simplest to understand.

You know that if the fuel-pipe on your car is clogged up, so that the motor isn't getting enough gas, it won't run to any large extent. And if the gasoline is of worse quality than usual, so that the carburetor can't break it up, the motor won't develop its full power. And, of course, if you run out of gas, that's as far as you go.

Just the same way, if the fuel-pipes to the muscles are clogged; if we cut off the circulation from the muscles by tight clothes, so that the arteries can't bring them their supply of energy as quickly as it is needed, they will tire much more quickly than they otherwise would. One grade of gasoline will give your flivver more "pep" than another. Some forms of food can be used for energy much more easily than others. Sugar gives us energy which can be used at once, while it takes longer to change other foods into a form in which they can be burnt up. If you eat a lot of sugar you are immediately ready for a long, hard job. That's the

reason why men in the army had such an appetite for chocolate, and why children, who use much more energy per pound of weight than grown-ups, have such a craving for sweet things.

If there is not gasoline enough in our tanks—if we are almost starved, and the energy which the muscles need simply isn't there, we can do mighty little before we're tired out.

The other cause of fatigue is the poison which is produced by the action of the muscles. To understand this we must know something about what goes on in the muscle when it works. You know that the products of a motor's action are poisonous—the exhaust gas will choke both folks and automobiles if enough of it is breathed in.

Well—a muscle contains a substance which is called glycogen, and which furnishes its fuel. The muscle itself has only enough of it to last it a short time, and it must then be replaced from the body's great glycogen storehouse, the liver. When this glycogen is used up in doing work, two main things are produced: carbon dioxide and lactic acid. Carbon dioxide is always produced when burning goes on. The lactic acid is a complicated substance, which is also found in sour milk. Neither of them is poisonous in itself, but they depress the muscle if they accumulate—they fill the cylinders full of carbon.

There are also some other poisons, which we have not yet traced out. We know that these poisons exist, because the tiring out of one muscle will tire all the others, even though they have not been used. And if an animal which has been thoroughly fatigued is killed and its blood is injected into another, this second animal will become tired even though it has done no work.

An Italian gentleman, by the name of Mosso, invented a machine somewhere around 1890 which he called the "Ergograph," or "work recorder." This instrument is arranged so that we can make one muscle (the one which bends the middle finger) lift a weight many times in succession, and record the height to which it is lifted each time. We still use this apparatus, and have

learned a number of interesting things from it.

You know that as a motor warms up it gets more powerful, until it gets too hot. The "Ergograph" shows that at first the contractions of a muscle get stronger for a short time, before they get weaker. A good deal depends upon the speed of the work. A flivver in good working order which is not overloaded will not overheat, no matter how long it is run. A muscle which is working slowly enough does not get fatigued. The poisons form so slowly that the blood can carry them off as they form, while it can keep the muscle supplied with fuel.

If your motor is run at too great a load you know that it will begin to overheat and knock. In the same way, a muscle which works so hard that the blood can't carry away poisons as quickly as they form, gets tired. The motor has to rest to get cool, and the muscles must rest to recover from its fatigue; in other words, to give it time to get rid of the poisons. If you start up your motor again before it has cooled you are liable to injure it. If you work a muscle before it has rested, it will take a much longer time to recover finally.

If your cooling system is not working properly, you know that you can drive farther by going slow. Just as you can do more actual work in the end by taking it easier and giving the muscle time to recover while it is working. In this way the poisons do not accumulate fast enough to produce a state of fatigue. The normal heart rests long enough between beats to get rid of its poisons and acquire new energy. So that it never gets tired. It is only when it is overworked continually that it tires out.

So far we have been talking only of muscles. The nervous system works in pretty much the same way. The storage-battery of your car runs down if it is used faster than it is recharged. The connecting wires, though, don't show any signs of tiring.

In the cells of the brain there are certain small bodies which are called "Nissl Granules." When the brain is

fatigued, these disappear, but come back when the cells are rested. They are evidently stored-up nourishment, and correspond to the glycogen in the muscles. The nerves, themselves, do not seem to get tired at all under ordinary conditions. The amount of energy they use is so small that the poisons they produce are easily gotten rid of. When it is made impossible for the nerve to get rid of these poisons, however, it will show fatigue after a time.

Our senses are tired out after a while, too, if they are stimulated continually by the same thing. When we enter a room we may smell an odor which escapes us after we have been in the room for some time. If we stare long enough at some object it turns gray and blurs. A monotonous sound grows fainter until finally we are deaf to it altogether. We don't feel the pressure of the clothes we always wear. And so forth.

Pain is a warning to us that something is wrong with our bodies which needs attention. It is a wise life-saving provision of nature. If it were not for pain we should be burning and cutting

and eating ourselves to death several times a day.

Fatigue also gives us a warning, in the shape of "that tired feeling." Sometimes we heed it—then again we don't. It is one of the great blessings and curses of our race that our will-power can overcome many purely physical hindrances.

A muscle which has been stimulated by an electric shock until it is so tired that it will contract no longer, will come to attention and get back to work at the summons of a stimulus from the brain. Like Scaevolus, the Roman who forced his hand to remain in the fire until it was consumed, we can whip our flagging bodies to renewed effort, until even the commanding brain must give in. Sadly enough we often do just that. That's why we have so many "nervous wrecks," so much alcohol and drug taking. We tire ourselves so much that our bodies cannot recover without the help of artificial stimulation. After all, old Scaevolus was the sensible man—for he lost only a hand.

## THE OPPORTUNITIES AND OBLIGATIONS WHICH CONFRONT US AT THIS TIME

BY DR. B. U. BROOKS, PRESIDENT DURHAM-ORANGE MEDICAL SOCIETY,  
DELIVERED BEFORE THE SOCIETY JANUARY 21

As we stand tonight on the threshold of the new year when our highest thoughts and best impulses are uppermost, the thought must come to us all, "What will be my contribution to mankind during the year?" "Wherein will my life be of greater service during the incoming year than it has been in the one just passed?"

With these thoughts in mind I have chosen for my theme tonight, "The Opportunities and Obligations Which Confront Us at This Time." As the greatest obligations and opportunities in our lives are in the prevention of useless suffering and useless waste of life, I have chosen three fields as the basis of my discussion, namely: Cancer, Vener-

eal Disease, and Infant and Child-life.

Let us consider first the facts concerning cancer, that disease of middle life and old age which claims annually in North Carolina over one thousand and two hundred victims, in the United States over seventy-five thousand victims, which claims more than one man of every eleven over thirty-five years of age, and one woman of every eight over thirty-five years of age. The actual facts in the case of cancer are that probably only one case of cancer in every ten is cured, whereas, if it were recognized early and properly treated probably only one case in ten would die. These conditions are due to the fact that the public is not en-

lightened in the matter of cancer and does not suspect the disease until it is too late, or if suspected, put off seeking proper treatment until it is too late. If cancer in its early stage were painful these things would not be so, because our patients would come to us for the relief of pain. But the sad and fatal feature is, that when cancer reaches the stage that it becomes painful it is generally incurable.

Let us consider in the second place the facts in the case of venereal disease, gonorrhoea, that curse which has caused more suffering to the innocent women of our country than all other diseases combined, and syphilis, that grim reaper that year in and year out claims two out of every thirteen deaths that occur in the United States, leading by a wide margin its next highest competitor—tuberculosis. The actual facts in the case of venereal disease are that the whole matter has been shrouded in so much mystery, the real state of affairs has been so successfully concealed from the public life that the whole country is riddled and infected with these terrible diseases and is not aware of it.

The poor woman who has suffered for years with "female complaint" has never been told that it is more than likely due to a gonorrhoeal infection; nor has the unfortunate mother of the more unfortunate and pitiful child, blind from birth, been told that this is almost surely due to gonorrhoeal infection; nor has the unfortunate woman afflicted with oft times and repeated abortions and miscarriages, ever been told that her trouble is of syphilitic origin. The poor woman who voluntarily enters the race with death, who endures the birth pangs with patience and fortitude, that a child may be born into the world, and who turns to us with her first conscious breath, after she has passed through this ordeal, and anxiously inquires if the baby is all right, does not realize that this question has been made necessary by the fact that so many babies have been born into the world bearing the marks and effects of a syphilitic infection. I believe it is a fact that there is not one single family in this State which

taken over a period of one generation has not felt the curse and suffering of venereal disease in some form. This is a bold statement to make; a hideous truth to reveal.

Gentlemen, who are the chief offenders? I leave that to you to answer. Who are the chief sufferers? I leave that question to you also to answer. These are the facts of venereal disease.

Permit me to bring to your attention in the third place the matter of infant and child mortality; that useless waste of human life which would seem to be breaking down the very foundations of our country. The facts in this case are that annually two hundred and fifty thousand infants in the United States die within the first year of life, and that of all the babies born in the United States, one in every eight dies within the first two years of life, that of thirty-three thousand deaths annually in the State of North Carolina eleven thousand are within the first five years of life, and that this needless loss of life is mostly due to the ignorance of the parents.

The errors of diet in the first three years of life are so flagrant as to be little short of criminal. It is of daily occurrence to see babies under one year of age eating the same foods from the table that the parents and older children eat. It is of no infrequent occurrence to see mothers chewing food and passing it from her mouth to that of her helpless infant. It is more the rule than an exception to see children under five years of age eating candy, cheap cakes and other articles of food which destroy their appetite for wholesome and nutritious foods and thus bring on a state of malnutrition and undernourishment, from which it takes them years to recover.

These, gentlemen, are the facts that stare us in the face daily.

What are we to do about it? Are we to sit idly by and see these countless lives lost through ignorance? Are we to continue in our way heedless and disregarding the waste of life, when we have within our power the means to prevent it? No physician worthy of the name will answer in the affirma-

tive. Our part, as I see it, is to acquaint people with the actual conditions as they exist, to speak the encouraging words that give them hope, to stretch forth a helping hand to these suffering victims and do our full part in this battle for life. That is our highest service to humanity, that is our greatest contribution to our nation.

In the matter of cancer we should acquaint the public with the fact that, in its early stages, and only in its early stages, is cancer curable; that the so-called advertised cancer cures are fakes; that the only safe cure of cancer is early and radical removal by a competent surgeon.

It should be freely made known to the public that a small, painless lump in the breast of a woman past 35 years of age is of no small significance; that bleeding from the female organs, after the change of life, almost always means cancer, but cancer in a curable state if seen and treated by a competent surgeon.

That men, especially constant smokers, are very susceptible to cancer of the mouth, lips or tongue, and that any sore or swelling of these parts, especially after the person so affected has reached forty years of age, should be examined and treated by a competent person. The public should know that any long and continued irritation of any one spot is liable to produce cancer and should, therefore, be avoided.

In the matter of venereal disease our obligation is probably greater on account of the mystery and secrecy which heretofore have shrouded this terrible scourge, to which crime, be it said to our shame, we have given our sanction and lent our support. One of the greatest benefits which we have derived from the great world war, with its untold suffering and destruction, is our change in attitude towards venereal disease. When the searchlight of the army physical examination was brought to bear upon the youth of our land it exposed in all its hideousness this vampire which is sapping the life-blood and mankind of our nation. It made us stop and take stock of our greatest national asset, the young men, and in-

evitably brought us to the conclusion that if our nation is to live and develop into a greater and better nation this scourge must be understood by the whole people, and the fight brought out into the open.

This great battle heretofore has been fought in the trenches with tremendous suffering and loss of life, but in order to attain success this foe must be brought into the open, where he can be relentlessly attacked on all sides and by all the forces at our command. It remains for the American physician to bring this enemy into the open and when once in the open countless reinforcements will be added to our army and the battle will surely be won.

In order to do this the fundamental facts of venereal disease must be given to the public. They must know that every case of locomotor ataxia, every case of paresis, is of syphilitic origin; that three miscarriages or still births is, in itself, very strong proof of a syphilitic infection; that two of every thirteen deaths in the United States is due to syphilis; that syphilis claims annually almost, if not quite, as many victims as did the plague of influenza in 1918 when it was at its worst; that the great majority of deformed and degenerate and imbecile infants and children may be attributed to the effects of syphilis.

The public should know that gonorrhoea is undoubtedly the greatest source of suffering to which the women of our land are subjected; that to this source must be attributed the great majority of pelvic and abdominal operations on women; that the greater portion of the so-called "female complaint" have their origin in gonorrhoea. The public should know that gonorrhoea is one of the most difficult diseases to cure, and, frequently, when thought to be cured, it recurs. The public should know that the only way to arrive definitely at a diagnosis of syphilis and gonorrhoea is by laboratory examination, conducted by a competent expert, and that a diagnosis of syphilis cannot be positively made otherwise. They should know that many fakes and quacks and imposters are applying



their so-called cures and they should be taught to beware of them.

In the matter of the waste of infant and child life, what is our obligation? The public should be taught that the care of the child should begin with conception; that the mother should be well cared for and kept in good physical condition throughout her pregnancy in order that she may bring into the world a well nourished and physically perfect infant, and that she may be able to produce the necessary milk, nature's best infant food for the proper development of her infant during its first year of life. She should be taught that, as this tender life must have a slow, gradual, steady, physical growth, so must it have a slow, gradual, steady, digestive growth, the digestive growth extending over a period of time almost equal to the period of time necessary for the physical growth. She should be taught that, as her child is unable to combat adult physical problems, so it is unable to combat adult disease problems, and so should be constantly guarded against useless exposure to disease. She should be taught that the greatest single factor in the proper care and development of her child is the selection and use of a diet adjusted to its needs, a diet suitable to build bone, and muscle, and strength, and robustness sufficient to enable the child to resist the exposure to disease which is inevitable. She should be shown that over feeding, and not underfeeding, is the error into which she is most likely to fall; she should be shown that the great danger of the second summer, that bugbear of motherhood, is not teething, but improper feeding. She should be taught that the price of the well baby is, in the vast majority of cases, eternal vigilance and care in the selection and adjustment of its food; she must be shown that fresh air and sunshine are as essential to the proper development of her infant as is the proper food.

The facts presented are only a few of the most glaring facts, which must stagger us with their significance and bring us a full realization of the obligation resting upon us.

What is the remedy? The remedy

rests with us and therein is our opportunity. The remedy is enlightenment of the people to the stage that this useless waste of life will be looked upon as the crime that it is. Heretofore, it has been called "Providence." We must brand it in its true light as ignorance, superstition, and crime. The trouble is not unwillingness of the public to be relieved of this suffering but ignorance of the conditions as they exist and ignorance of its remedy. It is our work to bring enlightenment where there is now ignorance.

Forces are already at work throughout our land to bring about this enlightenment. These forces have only touched in spots; we, the medical profession, in the actual practice of medicine, are one of the spots touched, probably the most vital spot, in that through us this enlightenment could best be disseminated and it remains for us to spread this gospel among the people, the everyday people of the world.

To accomplish this every faculty at our command must be enlisted. Lawyers, teachers, clergymen, and above all the public press must be given fundamental facts as we have seen them and their aid enlisted in this great cause. The truth must be told in public addresses, private talks, and the thousand and one ways in which knowledge is spread. Steps should be taken to have these subjects incorporated in the curriculum of our schools. School children should live daily with these facts before them and about them in such a manner that strict observance of the correct principle of living and prevention of disease would be second nature. Until we reach that stage our work is still unfinished. The movement must be slow as all great movements are slow, but once it has gained its full momentum it will move with an irresistible force. I know not when the fruits of our labors may begin to show definite results. I know not that it will be within the lifetime of any gentleman here present, but this I know, that, as surely as the night follows the day, the truths thus spoken, the seed thus sown, shall as surely pass on to ages to bless generations yet unborn.

### A DAY'S WORK OF A COUNTY NURSE

Just as I was starting for the L— School a man stopped me and asked if I would go to E— to see a girl who was "mighty bad off." He denied any knowledge of the case, except that the neighbors said she was "bout to die." I went immediately and found a fifteen-year-old girl, unmarried, in labor. She had been deserted a few weeks before by her father and had come here to a cousin, who did not want her. She was absolutely destitute, had not a single article of clothing for her baby, and only a few rags for herself. I delivered the baby under the most unsanitary conditions imaginable, then wrapped it in the cleanest thing I could find and hurried back to town to get some clothes from the Red Cross. I went to several women in the neighborhood and finally persuaded one to look after the patients until the next day, when the Superintendent of Public Welfare investigated the case and turned it over to the Associated Charities, who furnished a nurse for a week.

As it was then too late to do any school work until after lunch I visited a prenatal case in the same community. Mrs. K. was near the end of her pregnancy and had not consulted a doctor. As she showed definite symptoms of toxemia, I made her promise to send for her doctor post haste, which she did. She afterwards told me that the doctor found her kidneys in very bad condition and began treatment immediately. She has since given birth to her baby and had no complications.

After lunch I went to the L— School, inspected forty first-grade children and found thirty-five of the forty defective. Some of these youngsters were in such poor physical condition it was impossible for them to do good work in school. I talked to them on the care of the teeth, and promised to come back and give them the tooth-brush drill as soon as they all got tooth-brushes. I have heard since that they have exhausted the supply of tooth brushes in the town.

When school was dismissed at 3:30 I went on to see a family that had been reported as having "fluency." I found

the mother and two children in bed with high temperatures—the mother quite ill with pneumonia. The house was in wretched condition, very dirty and smelly, with a red-hot stove, and the windows nailed down for the winter. I bathed the children and made them as comfortable as possible, at the same time trying to teach the oldest daughter what to do for them. I also wrote out a diet list for her to follow and showed her how to make the egg custard her mother had expressed a desire for. The father came in and told me he had put sulphur in his shoes and "assefidity" around the necks of the little children, and he firmly believes that this will keep off the "fluency." I was too tired to spend any energy trying to disabuse his mind of his ideas of prevention, for I realized that he would never believe that "assefidity" would be powerless against the germs expelled with every cough, but I made a mental note that it would be wise to introduce the handkerchief drill in the L— School during the season of bad colds and grip.

On the way home I stopped to visit a child I had sent from school with a very bad looking throat. I found a family of seven children, all under fourteen years of age, and the mother cheerfully expecting another the next month. The fifteen-months-old baby seemed quite sick—had "the brown-chitus," the mother said, and was squirming under an onion poultice. The entire family had colds and sore throats. I took the children's temperatures, gave some advice about their diet, and made the mother promise to send for the doctor.

I got back to town in time for a bite of supper and then went twelve miles to C— to attend a community meeting. To my great surprise, although it was a cold night the little school-room was packed with mothers. I talked to them on Social Hygiene, and how to tell the story of life to their children; using lantern slides to illustrate. They all seemed very much interested and invited me to attend the next meeting of their parent-teachers association.

At 10:30 I drove my Chevrolet into the shed, went home and called it a day.



# The Health Bulletin

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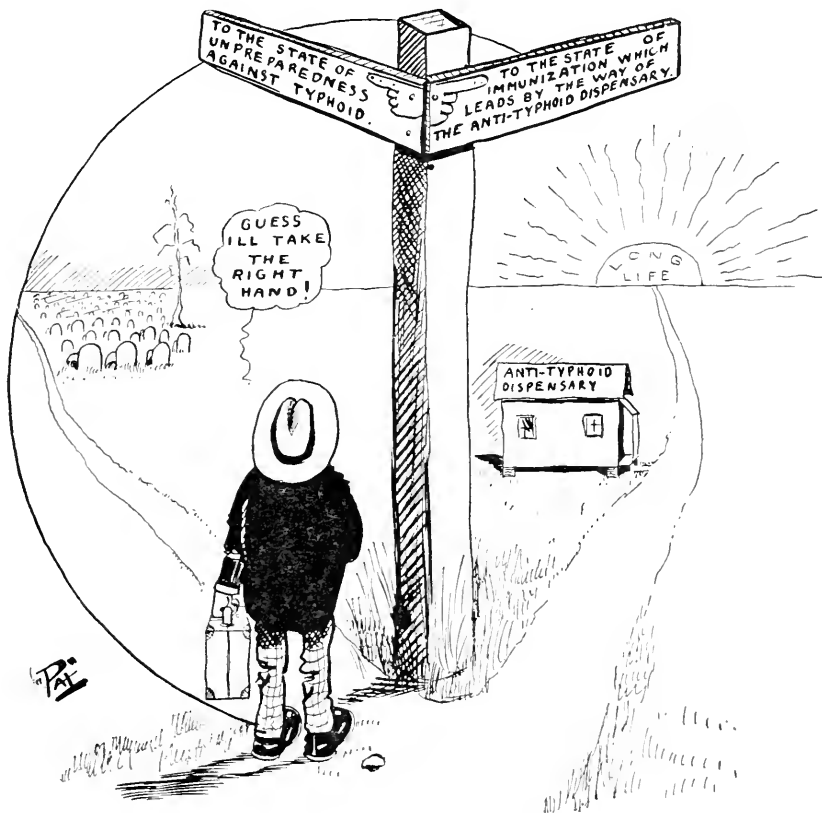
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TIME FOR WISE DECISION

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## SERVICE

The State Board of Health offers to the people of North Carolina, without charge, the services of experts thoroughly trained with particular regard to the needs of this State. Advice will be given promptly upon any question affecting the public health. Address any inquiry to the State Board of Health, Raleigh.

## FREE LITERATURE

The State Board of Health has prepared special literature on a large number of subjects which are offered without charge. If you are interested in any one or more subjects affecting your health, write the State Board of Health, Raleigh, requesting special literature, and it will be sent to you.

## THE HEALTH BULLETIN

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## MARCH

*Clean up and keep clean.*

*The best thing about a window—raising it.*

*Fresh air in the lungs is better than money in the bank.*

*It is easier to ventilate a room than to dig a grave.*

*A fool and his health are soon parted—and seldom reunited.*

*Feed yourself plenty of oxygen.*

*Tuberculosis can be cured if discovered in time.*

*The undertaker comes seldom to the home of open windows.*

*Sleeping in the open air is the best life insurance.*

*It is better to sleep in a cold room than a cold grave.*

*Keep the windows open and the pill box shut.*

*Fresh air is cheaper than drugs and better than doctors.*

*The only cure for tuberculosis is fresh air, good food, and rest.*

*Patent medicines are not made to cure—they are made to sell.*

*Fake tuberculosis cures guarantee just one thing—death.*

*To give other people tuberculosis—spit on floors and sidewalks.*

*When you don't know what to eat, eat nothing.*

*Good health can be bought, but not in a bottle.*

*The best nerve restorer—keeping clean in mind and body.*

## A FORGOTTEN LAW

In nearly every town and village of North Carolina there is a local ordinance with regard to spitting on the sidewalks or upon the floors of public buildings. The penalty varies from one to ten dollars. Aside from the city of Asheville the law is a dead letter in every community where it is supposed to be in force.

In a certain county seat town in the State the commissioners have posted signs in the courthouse calling attention to the fact that spitting on the floor is punishable by a fine of five dollars. One first Monday not so long ago the chairman of the board of commissioners stood in the hallway talking with a friend. Just back of him on the wall was the printed sign, "five dollars fine for spitting on the floor," in large black letters. As the county official stood and talked he expectorated voluminously in the general direction of a nearby corner.

On one of the principal corners of the Capital City the other day a policeman, off duty, stood and conversed with passing acquaintances. And as he leaned against the corner building for support he from time to time relieved himself by spitting on the sidewalk. Yet there is a city ordinance in Raleigh making such an offense punishable by a fine.

These examples are picked at random. Similar ones could be found in almost any place in the State. In a generous mood for correcting an evil the people have caused a law to be passed, and then utterly forgotten about the law. It is a habit of mind that seems to affect North Carolinians peculiarly. Pass a law, and thereby stop any or all evils.

The person who carelessly spits in a public place is a menace to society. It is a filthy habit entirely without excuse, even if it were not a dangerous one. But a public spitter may very easily become a murderer.

Muzzle the cough and sneeze, and

stop spitting on sidewalks, and in other public places. Have some thought for the comfort and well-being of other people, and endeavor at least to create the impression that you have the rudiments of good manners.

The enforcement of the law would help as a reminder.

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## GUARD AGAINST TYPHOID

For every day of February there was a death in North Carolina caused by typhoid fever. This was an increase of twenty death over the same month of last year.

The State is experiencing an unusually early spring. This means a longer fly season, and thus a greater period of danger this year for typhoid.

But typhoid fever can be prevented. Inoculation gives insurance against this disease for a period of two or three years, and perhaps longer. It causes no sore arms, no loss of time from work, and the vaccine is furnished without cost by the State laboratory.

The peak of typhoid incidence is reached in August, and ordinarily the summer months, which are also the fly months, are considered the ones when typhoid is most dangerous. It is true that the disease is most prevalent during those months, but at the same time there is always danger, even in the midst of winter, of becoming infected. The safe plan is to be inoculated, to take the three treatments which will render you immune.

Several counties have already planned to have anti-typhoid campaigns this spring and summer, and some of these are doing the wise thing and starting early. It is much safer in the early spring than in the late summer. Wherever county campaigns are to be waged they should be started as early as possible. Where there are no county campaigns the indi-

viduals should at once take advantage of the safe protection that is offered through their local physicians or health officers.

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### ALCOHOL AND HEALTH

For twelve years North Carolina has been prohibiting the manufacture or sale of intoxicating liquors within its borders. For more than a year the Nation has had a clause in the Constitution forbidding the same thing, with limited exceptions. Yet today North Carolina, as well as the remainder of the country, faces a liquor problem scarcely less serious than the one which caused the adoption of prohibition laws years ago.

The records of the United States Government tend to prove that there is now more illegal manufacture of liquors in this State than in any other. The records of the various courts of the State are filled with cases, from simple drunks to foul murders, which are founded upon strong drink, either its making, selling or consumption.

Probably as long as there is sufficient demand for liquors there will be found those to supply such demand. The evils that follow the filling of the human body with alcohol have been pointed out time and time again, and still there are many who will run almost any risk in order to obtain it.

Alcohol and good health do not go along together. Alcohol tears down, and makes ready the way for degenerative diseases. It, like a traitor, weakens all the defenses of the body against tuberculosis and other infectious diseases. Its use means an increased death rate. From a public health viewpoint the State Board of Health is deeply interested in present conditions, and commends to the readers of *The Bulletin* the article by Dr. Fisk on other pages.

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### TIPS ON RAT POISONING

A starved rat will eat anything from a strip of lead pipe to an old

boot, but a well-fed rodent, such as we have in the United States, is often inclined to be finicky in the matter of food. Rat poisoning campaigns often fail because the house owner does not give his intended victims a sufficient variety of edibles. Specialists or the biological survey of the United States Department of Agriculture urge a rat control campaign in the United States, and they stress the importance of catering to the rodents' tastes.

Rat baits may be divided into three classes: meat foods, vegetable foods, and cereals. In mixing his baits the successful poisoner selects a food from each of the three classes and combines it with barium carbonate in the proportion of one part poison to four parts food. Then he places a teaspoonful of each variety on a strip of paper or bit of board so that the rat, traveling along his runway, finds a three course meal all laid for him. Usually one of the three baits appeals to him, and the rat population is reduced by one. Poisoned baits should be watched carefully and uneaten baits replaced by others of the same class on the following evening. In this way a wide selection of foods may be used without departing from the basic combination. All baits must be kept fresh and tempting if the process of extermination is carried to completion. The common practice of smearing a dab of poison on a piece of stale bread which is then placed in some out of the way corner and neglected will not produce satisfactory results.

Barium carbonate is the poisoning agent recommended by the specialists. It is tasteless, odorless, and can be obtained at any drug store. Full directions for its use, and a complete list of the food combinations suitable for a poison campaign can be obtained upon request to the United States Department of Agriculture, Washington, D. C.

### A GRATIFYING RECORD

In the spring of 1918 the State Board of Health announced that energetic efforts would be made to reduce the total number of deaths in the State caused by typhoid fever to five hundred or less for the year. The previous year there had been 726, and it appeared an ambitious program to cut this down by more than two hundred.

Yet the goal was practically reached. The total number of deaths recorded from typhoid that year was 502. More than sixty of these occurred at the detention camp for interned German prisoners maintained by the Federal Government at Hot Springs. That such a great reduction was made, not only in deaths but also in cases of illness, was due to the efficient and hearty co-operation of the physicians of the State, of county authorities who gave the opportunity for free treatment against typhoid to their people, and to the people themselves who by the thousands took the anti-typhoid vaccine treatment, and who in even larger numbers built sanitary privies and screened their homes against the typhoid carrying flies.

The year 1919 showed a still further reduction in the fatalities from typhoid, and 1920 demonstrated that still further gains had been obtained. For the past year there were only 311 deaths in North Carolina from this cause. The wonderful progress that has been made in the fight against this disease is best shown by a comparison with 1914, the first year that the State had approximately correct reports of deaths, when there were reported 839 deaths from this cause. A reduction of nearly two-thirds in six years is a matter of pride and congratulation.

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### WALKING THE BEST TONIC

Walk some every day has been prescribed as a preventive of spring

fever. This does not mean walking in and about the house, or standing on the feet while at work. It means going for a real walk in the open air and sunshine, relaxing mind and body, leaving cares behind, and enjoying walking for the good it will do.

As spring advances the human body requires extra attention. It needs toning up in order to properly adjust itself to the change of season, and to completely recover from the bad effects of high temperatures and indoor living during the winter. But drugs, pills, and especially purgatives are not needed. They do more harm than good. Spring tonics that are worth while are exercises that will require the open air and sunshine, sufficient and regular rest of mind and body, and a diet largely composed of fruits and vegetables.

Walking every day in the open air is particularly recommended, whether it be walking to work, or walking for the sake of health. As to the health value of walking, Dr. William A. Howe says:

"This means of improving health, like fresh air, is within the reach of most people. Its energizing influence should be more widely utilized. A reasonable distance should be walked every day, regardless of weather conditions. It is not well to walk so rapidly or so far as to induce fatigue from which one does not promptly recover. Neither is it advisable to walk rapidly in the face of a strong wind, or on a rough road, or in ascending a hill. Unless already accustomed to walking it is far better to begin by going short distances each day, at a moderate pace, gradually increasing the distance and speed."

Try a daily walk for health this spring.

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### IRON AND RED BLOOD

About a teaspoonful of iron is the total quantity of that much-exploited element present in the entire mass



of blood of a healthy adult of average height and weight. Why, then, all this extravagant talk of iron and red blood? Iron is one of the least important elements of the blood. Such iron as the red blood corpuscles contain is supplied, not from medicine, but from natural foods, foods which have not been denaturized in the course of preparation for the table. The iron in wheat, for instance, is chiefly discarded with the screenings in milling; the iron in the potato is chiefly discarded with the skins, in those homes where the value of potato skins is not yet known.

When physicians administer iron as a medicine, internally or by hypodermic injection, they do not expect the iron to be taken up by the red corpuscles. They are fully aware that the blood iron must be derived from the natural iron of food, not from medicine. The medicine is given for the purpose of stimulating certain structures which are concerned in the production of red corpuscles, such as the marrow of long bones, the lymph nodes or "glands," the spleen. Also, at times, to act upon certain underlying conditions which are known to account for the blood weakness.

Now, it would certainly be fine if an anemic person, one with weak or "watery" blood, could simply swallow some iron-containing medicine two or three times a day to restore strength to the blood. But it isn't done. Oh, yes, the medicine is swallowed religiously. There are plenty of philanthropic gentlemen, with a surplus of iron to sell, who see to that. But the blood fails to grow strong.

Green fresh garden truck, fresh whole fruits, and undenaturized cereals such as whole wheat, unpolished rice, oatmeal, crushed corn, and nuts supply iron adequate for every possible bodily need.

Sunlight, direct exposure of the skin of as much of the body as possible, short of sunburn, of course, sup-

plies the natural blood-building stimulant.

In the vast majority of anemia cases, weak or so-called watery blood, the anemia or blood weakness is secondary to some systemic disorder, and not an explanation in itself for the patient's suffering. This is the reason why alleged blood-building medicines fail to cure anything, unless the underlying cause of the lack of blood is found and attacked by the physician. Indeed, it is the height of extravagance experimenting with supposed blood tonics in the vain hope of finding health therein. Anemic persons are easily misled by temporary stimulation or narcotic effects of alcohol, by the whipping up of the nervous system produced by strychnine and other nerve castigators added to alleged blood tonics. But somehow the ultimate result is never very satisfactory. The longed-for cure fails to materialize. In the end the patient falls into the hands of the physician anyway, so why not save time and money by consulting him early and often?

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### SYPHILIS CHIEF FACTOR IN DEATH OF INSANE

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That syphilis is the chief factor in the mortality of the insane is the conclusion reached by the Metropolitan Life Insurance Company after a close observation and study of 2,540 cases of industrial policy-holders who were known to have suffered from mental disease and whose deaths occurred in the space of thirteen months prior to April 30, 1920.

A report of the study says that syphilis was either the primary or contributing cause in over 30 per cent of the deaths of this group of persons. Syphilis itself was definitely certified either as the primary or secondary cause of death in 174 cases. General paralysis of the insane, which is now

known to be of syphilitic origin, was reported either as the primary or secondary cause of death in 613 cases. Locomotor ataxia and other syphilitic diseases were returned in five cases. It was found also that the death rate for mental diseases was more than 50 per cent higher among colored persons than among white persons, and that males show a rate about one-third higher than that of females.

Another interesting comparison brought out in the report is that whereas syphilis is either a primary

or contributing cause in over 30 per cent of the deaths of insane persons, tuberculosis is the cause in only 9.6 per cent, pneumonia and influenza in 8.2 per cent, organic diseases of the heart 8.1 per cent, arterial diseases 5.7 per cent, Bright's disease 5.5 per cent, cerebral hemorrhage and apoplexy 5.0 per cent. These diseases together with syphilis, account for more than 70 per cent of all the deaths of insane persons. Accidents were responsible for 1.3 per cent and suicides for 2.6 per cent.

## MOUTH HYGIENE

The subject of mouth hygiene and the care of children's teeth has reached that satisfactory stage where the dental profession is receiving hearty co-operation from the medical profession, from school boards and from health boards.

The importance of proper inspection and proper care of the teeth of children has reached that period where it is recognized as a part of the child's education and training. It is a factor to be considered in the great public health movement which is sweeping the country.

Examine, for instance, the mouths of children in the public schools and what do you find? Our examinations show 80 per cent of these children have decayed teeth. Fifty per cent of the decayed teeth are the first molars, which are the sixth year permanent teeth and one of the keystones to the dental arch, frequently decayed beyond repair while parents regard it as a temporary tooth and not worthy of attention. The treatment of children is on the right road, and is steadily progressing until it bids fair to become universal, and it is pleasing to think that with instruction of the young in the means of prevention, and with treatment of their teeth, a generation is growing

up who will not be satisfied to let the attentions of early years be thrown away and wasted. The public has shown its recognition and appreciation of this work.

School inspection is growing year by year, and no thoroughly up-to-date school building is now planned without provision for the dentist and his work. One or more decayed teeth, with consequent infection, so impair the vitality of the child that physical and intellectual development is impossible. Thus weakened, such a child becomes dull and backward in school, and when adult life is reached, he is found as a member of the defective class, and becomes a burden, possibly a danger, to the community in which he lives. Attention given in early life to this important impairment, the child is likely to grow into a self-supporting intelligent man capable of contributing more or less to the welfare of his community.

At the age of six years a child can understand more or less the value and uses of his teeth, and when properly instructed, can assist in carrying out measures for their preservation. The ability to take an intelligent part in this work naturally increases from the sixth to the twelfth year.

(1). Clean, sound teeth are necessary for the health of the body.

(2). Food allowed to remain about the teeth causes them to decay.

(3). Brush the teeth carefully after each meal to remove particles of food.

(4). Hard, thoroughly chewed foods are best for the teeth, and for the whole body.

(5). The teeth should be examined by a competent and conscientious dentist at least twice a year.

If young children learn these principles early when they are learning to read, to write, to cipher, they will make a permanent impression upon them. It is as important that the child's parents should be as intelligent about the teeth, and as interested in their welfare as the child. The child needs help at home in carrying out any prophylactic measures which it learns to be important. If this help is not given, and if the child's efforts are discouraged, we cannot expect anything but failure. This is too often the final result of carefully planned efforts to institute preventive and protective measures in the child's mouth.

The parents should inform themselves of the time of eruption, and the general characteristics of the temporary teeth. Particular emphasis should be made of the fact that the child depends on these teeth wholly, or in part, up to about the tenth year of its life, and that these teeth, if kept in good condition and properly used, have an important part in developing the bones of the face. Besides, they perform the important duty of masticating and preparing food for the digestive process.

Special attention should be given the sixth year molars. From five to six years of age this tooth makes its appearance behind the temporary molars and does not take the place of one of them. This fact should be brought to the attention of parents with the utmost clearness, as they are so often deceived into thinking

this to be a temporary tooth, due to the fact, it is the first permanent tooth to erupt, and appears back of the temporary teeth, and not replacing one of them. Sometimes there are minute fissures in the enamel surfaces of these sixth year molars which require filling when the teeth first appear.

Through the proper care of the temporary teeth, the permanent ones are protected to a great extent against disease and decay, and are much more apt to erupt in normal relation to each other, and not in an irregular, crowded manner, as is often the case where the temporary teeth are lost too early, or where they are allowed to remain in position too long.

The too early loss of the temporary teeth retards the formation and development of the maxillary (jaw) bones, so that when the time arrives for the eruption of the permanent teeth, there has not been sufficient development of the bones to accommodate the large permanent teeth, with the result that they are irregularly erupted.

On the other hand if the temporary teeth are allowed to remain in too long the results may be equally as serious as they will retard the eruption and development of the permanent set, pushing them out of proper position, and in many instances causing an irregularity. This being true, and for the normal eruption of the permanent teeth, is it not worth the parents' while to have the temporary teeth examined at intervals and removed only at the proper time to secure the best results in relation to the permanent teeth?

Just here, I feel that I must call your attention to another prevailing condition that results in irregularity of the teeth and mouth and face deformity, and that is:

Thumb-sucking: Parents should especially guard a child from forming the habit of thumb-sucking. This

pernicious habit pushes the teeth out of their natural position and may permanently distort the shape of the mouth. It is conducive to the condition we call protrusion.

The bones of the face are developing and are soft, and the erupting central incisors are easily moved by the pressure of the thumb which the child places in his mouth against the back of them. The muscles of the cheeks tend to contract the arch, or prevent its proper expansion, and the result is a narrow V-shaped arch and projecting front teeth.

Mouth breathing is another cause of producing the narrowed arch. In normal respiration the air is inhaled through the nasal passages, but the presence of adenoids will, however, by obstructing the air passages, cause mouth-breathing. The chin fails to develop, the nose is small, the upper lip is short, augmenting the prominence of the incisor (front teeth), which do not occlude in front.

These are the principal causes of irregular teeth, and the correction of these causes should be undertaken as soon as any deviation from the normal condition is noticed, and when the bones are soft and yielding. In normal occlusion, the upper front teeth slightly overlap the lower.

A child is badly handicapped when, through ignorance or carelessness, the teeth are permitted to assume abnormal positions in the arch. A tooth out of alignment does not properly perform those functions designed for it, but thereby interferes with the digestive process. It mars the facial expression of an individual, sometimes to so great an extent that his future business and social life is affected by it. How much better an opportunity has the man with the well-proportioned features over the man with the protruding upper teeth and receding chin!

Proper care of the mouth and teeth is one of the most important conditions for the protection of the child,

and a parent should not fail in this through carelessness or ignorance.

The care of the mouth and teeth of small children requires thought and attention, and results are more serious, when neglected, than is generally accepted. As soon as the teeth begin to make their appearance they require attention. In infants until they reach two years of age, an excellent plan to follow is to use, as a mouth wash, a solution of boric acid—one ounce to a pint of water at least twice a day. This can best be done by using absorbent cotton wound around the tip of the index finger and dipped in the solution, then applied, with gentle rubbing to the gums and teeth. After the child has reached the second year it is well to begin the use of a soft tooth brush daily. The teeth of every child over two years of age should be examined by a competent dentist, at least every six months. If cavities are discovered in the first teeth they should be filled with a soft filling. The mouth is the gateway to the system, and what is the use of having the forks and knives and dishes clean; or having the butcher and baker and grocery man neat and clean in handling food-stuffs if the teeth which cut the food up are not clean and the juices of the mouth are not fresh and clean? Is this not reason enough for keeping the mouth clean.

It is not a difficult task for the parents to exert an influence over the child which will develop a pride in clean, sound teeth.

In conclusion I wish to again lay emphasis upon the education of the child so that he will take a lively interest in the welfare of his own teeth. Without the intelligent cooperation of the child all efforts for the improved conditions of the mouth and teeth will be ineffective and disappointing. But if all helpful forces are united for the child's welfare much good can be accomplished.

## THE RELATIONSHIP OF ALCOHOL TO MODERN HEALTH IDEALS

By Eugene Lyman Fisk, M.D., Medical Director, Life Extension  
Institute, New York, N. Y.

Man has advanced biologically as far as evolution can carry him—evolution connoting that complex group of factors apart from self-directed intelligence that moulds and modifies a species. In fact, Professor Conklin, in a recent address at Princeton, submitted evidence in support of the view that biologically man has deteriorated.

While we lack precise and comprehensive data as to the physical condition of mankind—say 50,000 years ago—reasoning by analogy we can at least set up a standard of original physical excellence for man comparable to that found in other animals in a state of nature. Measured by such standard, the human animal shows marked physical inferiority and many evidences of degeneration and physical insufficiency. This is perhaps best visualized by those having an opportunity critically to examine many thousands of supposedly healthy people, as in the work of the Life Extension Institute, which has covered some 200,000 examinations. Life insurance examinations, while more limited in their extent, also offer ample evidence of physical defects, impairments and functional insufficiencies among so-called “average people.” A few figures will illustrate my meaning.

In the examination by the Life Extension Institute of ten thousand industrial and commercial workers, active at their work and supposedly in good average physical condition, 83 per cent showed evidence of nose and throat defects (17 per cent marked

or serious); 53 per cent showed faulty vision uncorrected; 21 per cent flat foot; 56 per cent defective teeth; 62 per cent of mouths x-rayed showed root infection; 12 per cent showed well marked cardio-renal-vascular changes; 9 per cent showed marked lung signs, including tuberculosis.

Among 5,000 individual members examined at the head office of the Life Extension Institute, about 3 per cent showed evidence of venereal infections; 30 per cent showed albuminuria ranging from slight to marked; and 50 per cent showed some evidence of arterial change.

It may be stated from our experience that more than half of any body of supposedly healthy people will show need for medical, dental or surgical attention, and practically all need some revision of their personal hygiene.

Examinations for war service in this country and other countries has afforded similar testimony. It may be asked: In this present state of war and famine and world misery affecting so many millions of people, why is it necessary to dwell upon these disturbing and apparently discouraging facts? I take it, however, that this is a meeting of scientific men interested in securing sound evidence, regardless of which way it cuts. I am convinced that, after all, it is the truth that shall make us free and not mere blind optimism. However, for the comfort of those who insist that pleasantness must be the touchstone of truth, I may say there is nothing in this evidence pointing

to the physical degeneration of man that should assail us with discouragement. Quite the contrary. All thinking men are dissatisfied with the present state of human society. They are all agreed that there is too much human suffering and incapacity, but there are few people that have any adequate conception of the degree to which this world misery is due to preventable physical impairment or to faulty mental adjustment that is susceptible to correction. Evidence such as I have quoted reveals a great basic truth that is in sharp conflict with conventional traditions, even among medical and other scientific men.

The process termed "ageing" is merely a manifestation of slowly progressing pathological change, due to definite and, to a considerable degree, controllable physical causes, although in the minds of most men it is ascribed to the influence of time. This conventional picture, however, is wholly changed when we attain a correct perspective and clearly visualize the extent to which bodily changes and even character and personality are influenced by such factors as chronic infection, chronic poisoning, food deficiencies or other faulty conditions in the life or environment of an individual.

I am optimist enough to believe that, regardless of the fact that evolution has done so little for the human race, man is gifted with sufficient intelligence to make him independent to a considerable degree of the evolutionary forces that control the destiny of unreasoning animals. He has already demonstrated his ability to meet and neutralize many unfavorable factors in his environment and even in his heredity. It can be truthfully stated that, impressive as some of this work has been, it merely represents the first steps of science in controlling human development. Mortified and discouraged as we may be when we consider world conditions as they now exist, the lesson is perhaps a whole-

some one as bringing out the profound truth that there is no innate tendency in man to progress; he cannot count upon a steady, a gradual progress towards the millennium unless he uses this intelligence efficiently for the direction of the development of his organism as a whole and the adjustment of it to world conditions.

In the midst of present-day afflictions and deplorable tendencies, many of which may well sap our confidence in the title of humanity to occupy this footstool as a dominating organism, there may be discerned some mitigating and distinctly hopeful signs. I feel that there is actually an awakening of the physical conscience of the people. Communities are becoming ashamed of high death rates and morbidity rates. Industrial corporations are recognizing their obligation to consider the working condition and the health of the employees. They appreciate the influence of low health standards on industrial efficiency and industrial turn-over and therefore on national prosperity and happiness. This entirely apart from the obvious obligation that rests upon the community to protect itself from epidemic disease that can be met and defeated by elementary sanitary precautions. Proceeding from the obvious necessity of governing community hygiene and insuring pure food, pure water and protection against epidemic infection, there is coming to be recognized the obligation upon the citizen himself to keep in as good condition as he expects the health department to keep the city in which he lives. There is, I believe, a gradual return among intelligent men who mould the thought of communities towards the old Greek ideal of physical excellence and standards for real manhood. In our complex civilization, mind has outrun the body and the dominance and power that mere mental ability brings has created a certain contempt for so-called brute strength and physical power. But,

taking the people as a whole, we have abundant evidence of the truth of the Spencerian aphorism that "To be a good animal is the first requisite to success in life, and to be a nation of good animals is the first condition to national prosperity." Be assured that no nation can afford to neglect this principle, that no nation can rely upon brains alone for maintaining and carrying forward its civilization. There must be underlying physical and moral excellence or evolution will truly operate to obliterate that nation from the map.

How does this discussion touch the alcohol question? There is, of course, an obvious relationship, but its significance is more profound than may appear at first glance. If man is indeed to free himself from evolutionary influences alone and mould his destiny toward higher planes of physical and mental existence through the governing power of intellect, he must classify and value the menacing factors in his environment. Alcohol is obviously one of those menacing factors and is classified as a poison, but how shall we evaluate it? Paradoxical as it may seem, I believe that the prospect of a thoroughly sane and scientific evaluation increases as we come to recognize the fact that alcohol is not the one great underlying cause of human misery; that it is only one among a number of major factors that are responsible for human failure. As we approach the consideration of alcohol in this spirit we move away from mere emotional propaganda with regard to it, and we enlist the interest of the whole people in a cold-blooded consideration of the scientific evidence that is available with regard to the influence of alcohol on the human race. A striking instance of this changed attitude of mind is afforded by the recent action of the Unitarian Temperance Society in announcing the inclusion in its program of a broad health propaganda and an encouragement of periodic

physical examinations so that a search may be made for all conditions that menace the health and happiness—and therefore the moral state of the people.

It is important that these principles be widely disseminated, that the relationship of impaired personality to impaired physical condition be more thoroughly appreciated by all who are working to improve the social condition of mankind. There has been a vast amount of wasted effort in working on the surface of conditions rather than attacking those problems fundamentally.

Placing the consideration of alcohol, therefore, where it belongs in the general program of upbuilding the health and vitality and living capacity of all mankind, we can consider it just as we would consider focal infection or a high protein diet, or over-weight, and insufficient exercise. There is no question but that a considerable number of people are sustaining more damage from over-indulgence in food than many people sustain from obvious over-indulgence in alcohol. Each form of over-indulgence is important and should be courageously attacked by the hygienist.

Fortunately, over-indulgence in alcohol can be directly attacked by restrictive measures that cannot be applied to over-indulgence in food, except during the emergencies of war. There was, however, during the war abundant evidence of the wholesome effect of restriction in meat eating and in sugar consumption. I cannot include within the limits of this paper a complete discussion of the evidence that is available as to the harmful effect of alcohol. I am not aware that there is any respectable evidence available that its use as a beverage has any direct beneficial effect on the human organism. In such isolated instances where there is a beneficial effect I believe this can be classified under its therapeutic influence as a drug. That it has a very

limited range of therapeutic usefulness is the consensus of modern medical opinion. In brief, I may say that there is good ground for assuming that the direct chemical destructive effect of alcohol on the tissues is probably less than many have heretofore supposed. There is, however, an accumulation of evidence showing its unfavorable influence upon the organic functions, especially upon the central nervous system and the circulatory apparatus. The elaborate researches of Professor Francis G. Benedict at the Nutrition Laboratory of the Carnegie Institution, which have the merit of demonstrating the influence of alcohol in beverage doses on selected normal individuals, is particularly important as clarifying and carrying forward the earlier experiments of Rivers, Kraepelin, Aschaffenburg, and others. Benedict developed no evidence that alcohol, even in moderate doses, improved the organic efficiency of the circulation. The evidence was in the contrary direction. The disturbing and depressing effect of alcohol on the protective mechanism of the body was quite plainly revealed by these experiments. Such evidence is far more conclusive as establishing the effect of alcohol than those conducted on the perfused heart or muscle of an animal, such as have been reported by Lee, Burridge, and others. We are concerned with the total effect of alcohol, not with its partial effect under abnormal circumstances. This total effect is one that has a profound influence upon conduct and upon the responses of the individual to the menacing factors in his environment. This evidence leads us away from the consideration of the obviously destructive effect of alcohol on the drunkard, to its influence on the so-called moderate drinker, and here we have the testimony of life insurance offices which are entirely consistent with laboratory testimony as to the disturbing effect of alcohol on human

life. These, briefly summarized, are as follows:

The first important contribution of life insurance offices on this question was that of the United Kingdom and General Provident Institution of Great Britain, which made a comparison of the mortality among total abstainers and the supposedly moderate users during the period 1866 to 1910. This showed an excess mortality of 37 per cent among the users of alcohol, notwithstanding the fact that this was a carefully selected group with a favorable mortality as judged by normal standards, nevertheless the abstainers showed a far lower mortality. That this was a genuine business record is evidenced by the fact of the payment of heavy bonuses derived from these mortality savings. Other British and Scottish companies showed similar experiences.

Every effort was made by cautious actuaries and statisticians in this country to pick flaws in this evidence and opinion as to its significance was suspended in many life insurance offices until the report of the medico-actuarial investigation in this country, covering the experience of 43 American life insurance companies, became available. This investigation covered the period from 1885 to 1908 and the material was drawn from the records of two million policy-holders. The groups studied were homogeneous, except for their varying use of alcohol, or their varying exposure to alcohol, as determined by their occupation. All complicating factors, such as physical defects, impaired family history, or personal history, were excluded. The results may be summarized as follows:

"1. Those who were accepted as standard lives, but whose histories showed occasional alcoholic excess in the past. The mortality in this group was 50 per cent in excess of the mortality among insured lives in general, equivalent to a reduction of over four years in the average lifetime of the group.



"2. Individuals who took two glasses of beer, or a glass of whiskey, or their alcoholic equivalent, each day. In this group the mortality was 18 per cent in excess of the average.

"3. Men who indulged more freely than the preceding group, but who were considered acceptable as standard insured 'risks.' In this group the mortality was 86 per cent in excess of the average.

### STRIKING COMPARISONS

"It should be borne in mind that these comparisons are made with the general class of insured individuals, both users and non-users of alcohol. Comparison with total abstainers alone would probably show a much greater difference. It is noteworthy that in these drinking groups the death rate from Bright's disease, pneumonia and suicide was above the normal, and that among the steady so-called moderate drinkers—those using more than two glasses of beer or one glass of whiskey daily—the death rate from cirrhosis of the liver was five times the normal."

It should be understood that this investigation was simply a part of a general investigation of the mortality experience as affected by various factors, such as habits, occupation, over-weight and personal history.

Mr. Arthur Hunter, Actuary of the New York Life Insurance Company, former President of the Actuarial Society of America, and Chairman of the Committee that conducted this investigation, in order to check up this massive result and detect any possible fallacies, had special studies made in his own company of various types of drinkers. The testimony elicited was always consistent as to the influence of increasing alcohol indulgence in producing an increased mortality. It should be borne in mind that the individuals investigated in the medico-actuarial study were accepted as standard risks.

In the New York Life Insurance Company, the special investigation covered the experience on a number of sub-standard risks in which a lien was placed upon the policy. It was the custom of the Company to rate

up or penalize applicants who confessed to an indulgence in alcohol equivalent to three ounces of whiskey or one quart of beer daily. This practice was justified by the final experience on these lives which exhibited an extra mortality of 100 per cent. In other words, a total extra mortality risk approximating that in cases of heart disease, syphilis and other impaired states that the average free drinker would regard with considerable terror, although comfortably confident that his own indulgence is not in any way injuring him.

Further figures from the same Company show the following:

	Approximate Extra Mortality
Excessive use of alcohol a short time prior to date of application-----	80 per cent
Excessive use of alcohol not recently, but within five years of date of application -----	45 per cent
Entire class with history of excess, including above and also those whose last excess occurred more than five years prior to date of application -----	60 per cent

Similar individual investigations were made in eight other companies and the testimony was always consistent as to the influence of alcohol upon the death rate. The evidence as to the influence of occupations in which alcohol was a factor was also consistent, showing the malignant effect of the circulation of this beverage in any group of people and may be summarized as follows:

"Saloon keepers have a death rate higher than that of underground mine foremen; brewery foremen, maltsters, and the like, have a death rate higher than electric linemen, glass workers, city firemen (laddermen, pipemen, hosemen), metal grinders or hot iron workers, although there is nothing in the brewery or saloon business *per se* that is at all hazardous or unhealthful, aside from the possible temptation to drink and its collateral hazards.

"Among hotel keepers tending bar the death rate from cirrhosis of the

liver was six times the normal; from diabetes, three times the normal; from cerebral hemorrhage or apoplexy, nearly twice the normal; from organic diseases of the heart, nearly twice the normal; from pneumonia, nearly twice the normal. For brewery officials insuring under 45, the death rate from cancer and other malignant tumors, cerebral hemorrhage and apoplexy, organic diseases of the heart, pneumonia and Bright's disease, among the proprietors, managers and superintendents is the liver, three times the normal. The death rate from suicide is nearly twice the normal."

These figures again emphasize the fact that these unfavorable results are not due wholly to the chemically destructive effect upon the tissues, but to its disturbing effect on the whole organism and especially on the conduct and relationships of the individual. These are, of course, legitimate effects of alcohol. Occasionally the naive suggestion has been made that these figures do not reflect moderate drinking, but the development of immoderate drinking among theretofore moderate drinkers. The increased indulgence in alcohol thus postulated for the moderate drinker is quite as much a pathological state as cirrhosis of the liver or disease in any other part of the body, and must be charged against moderate drinking. The question in a nutshell is this: What risk does a man assume when he enters the ranks of the so-called moderate drinkers? This risk is quite definitely shown by life insurance experience. On the other hand, there is abundant evidence from laboratory sources as to why this extra risk should obtain. If we had no laboratory experience, the life insurance experience would lead us to expect what is actually found in the laboratory, and if we had no life insurance experience, the laboratory testimony would lead us to expect approximately what we do find in the life insurance offices. Upon such evidence society is justified in at least trying the experiment of a very rigid restriction of alcohol indulgence.

To the man who says that alcohol has been used for ages and that the human race is still here, I answer "yes, but the human race is not yet in a position to give a report that it can be proud of as to the custody that intellect has given the body intrusted to its care, nor can man at the present moment secure a very high rating as to his social and political adjustments."

Until we can make a better report on these matters let us not prate about what we have been doing with alleged impunity for thousands of years, but rather let us search for the gross errors we have committed in our living habits during these years and see what can be done by an organized effort to move up onto a higher plane of existence. Already, in this country, an experiment is in progress in throwing overboard an ages-old custom supposed to be more or less necessary to the majority of our people, and already we are beginning to discern that the human race has been fooled for ages and that this custom is in fact apparently necessary for only a very limited number of pathological individuals.

After all, there is nothing like evidence to settle debate and even in the early stages of the prohibition experiment in this country, quite a number of bugaboos have been laid to rest with regard to the supposed necessity of alcohol indulgence, and the supposed disasters that would follow its restriction. All good sports will welcome a thorough and fair trial of practical abstinence on the part of a nation of a hundred and ten millions of people, and all good sports will join in making this experiment a fair and square one.

If alcohol is a hormone, let us know it. If alcohol is a fake hormone, as present evidence would indicate, let us admit this fundamental truth and justify the possession of that reasoning intelligence which distinguishes man from the brute.



# The Health Bulletin

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No. 4

## IN CASE OF TUBERCULOSIS, LOOK TO THESE FOR CURE



### A WONDERFUL RECORD

This year there will be a thousand less deaths in North Carolina from tuberculosis than occurred just ten years ago. Tuberculosis and death no longer are synonymous. But tuberculosis can not be cured by the use of any patent "fake" cure. Rest, fresh air, good food, with medical supervision, will turn the trick.

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### FREE HEALTH LITERATURE

The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in.

WHOOPIING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
CARE OF THE BABY  
FLY PLACARDS  
TYPHOID PLACARDS  
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FLIES  
COLDS  
TEETH  
CANCER  
PRE-NATAL CARE  
MALARIA

SMALLPOX  
ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES  
CATARRH

### FOR EXPECTANT MOTHERS

Rose M. Ehrenfeld, R.N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend send name to the State Board of Health, and give approximate date of expected confinement.

### THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for *The Bulletin* each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.

# THE Health Bulletin

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Vol. XXXVI

APRIL, 1921

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## WHICH?

BY DR. R. S. BAILEY, *Health Officer, Vance County*

Just let some one mention a bedbug or louse  
To folks who are clean or refined,  
They will shudder with horror and clean up the house,  
'Till never a bug can you find.

Yet the esthetic creatures who feel so disgraced  
When such vermin are found in the home,  
Will slap at a house-fly in languid distaste,  
Or let it contentedly roam.

Yet bedbugs and lice carry little disease,  
Only two that we actually know;  
Relapsing, the typhus, both on the decrease,  
Excepting in "Poverty Row."

Of all the disgusting, the nasty insects,  
Whose presence should rouse our fears,  
The fly is the filthiest thing that infects,  
Bringing death to this valley of tears.

Then train up the children at home and at school  
That the fly is the greatest of foes;  
That to fail to destroy them is acting the fool,  
Whose folly will fill up his woes.

## FEWER DEATHS FROM TUBERCULOSIS

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A new low death rate from tuberculosis in North Carolina was established in 1920, according to statistics compiled by the Bureau of Vital Statistics. The total number of deaths from this cause for the past year was 2,865, as against a total of 3,005 for the previous year. The reduction in deaths from tuberculosis was one of the important items in enabling the State to achieve a remarkably low death rate as a whole, the rate for all diseases having been 12.9 per thousand.

Figures tell an eloquent story of the winning fight against tuberculosis in North Carolina during the past few years. In 1915 this disease, popularly known as "the Great White Plague," filled 3,710 graves with Tar Heels. Since then there has been a steady decline, so that last year there was a difference of 845. The people of the State are demonstrating that tuberculosis is a curable, and a preventable, disease.

A comparison with the United States, as a whole, shows that this State has an enviable record. In 1919 tuberculosis caused a total of 111,579 deaths in the United States, only organic heart diseases being charged with a greater number of deaths. The rate was 131 per hundred thousand of population. The rate for the same year in North Carolina was 117.5 per hundred thousand of population, and last year this rate dropped to the new low level of 112 per hundred thousand of population. While it will be several months yet before accurate figures for the entire country are available, it would seem almost assured that this State will be among the ten having the lowest death rate from this cause.

Fatalities from tuberculosis have been much greater among the negroes of the State than among the whites. The beginning of an organized effort among the negroes to fight tuberculosis was made about two

years ago. The State Board of Health and the North Carolina Tuberculosis Association jointly have maintained and directed the work. The recent General Assembly made an appropriation of \$100,000 for a sanatorium for the treatment of negroes suffering with this disease. Equally as good results may be expected to follow among the negroes as have been achieved for the population as a whole.

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## IS THE BABY NAMED?

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We find that a great many birth certificates come to the Bureau of Vital Statistics without the name of the child. Of course some supplemental reports with names of babies come in later but there are a vast number of birth certificates on file in the Vital Statistics Bureau with the name still missing. It is impossible to figure out why people are so careless about the ONE thing that is most important to the child. For statistical purposes certificates without the name are just as good as the one with the names, but for the individual they are almost worthless.

Suppose in years to come a person whose name does not appear on his birth certificate, tries to prove his right to vote, or his right to inheritance, here is what happens: He sends to the Bureau of Vital Statistics for a certified copy of his birth certificate. He writes that he was born on such a date, at such a place, giving names of his parents. The Bureau filing clerk looks for the certificate and finds that a child on that date was born to those parents named in his request, but no name appears on certificate. His parents are dead, the doctor or midwife who attended the birth is dead, the local registrar is also probably dead. He will have a tedious job proving that the birth certificate is for the party in question.

Putting the name on the certificate does away with all this trouble and bother and makes an undisputed legal record of the birth, and gives

the child a legal status that nothing else can give. We hope the people of North Carolina will awaken to the importance of naming the baby early and seeing that the name appears on the birth certificate before it is sent to the Bureau of Vital Statistics.—  
F. M. R.

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### MANY DIE BY FIRE

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Nearly three hundred people in North Carolina met their death last year by fire, the total being barely below the record for the previous year. In 1920 there were eighteen lives lost in conflagrations, while 279 died from other burns. The total was 297. For 1919 there were 24 lives lost in conflagrations, and 276 from other burns. The total was 301, just four more than for the last year.

The majority of the deaths from burns were children, resulting from the accidental catching fire of their clothes, either from open fires or from playing with matches. In the list of those dying in conflagrations are also children who had been left alone in houses that caught on fire.

The death rate from disease is being steadily reduced in the State, but the accident hazard, as the figures quoted show, remains practically unchanged.

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### ASSISTANT SANITARY ENGINEER

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Mr. George F. Catlett, of Wilmington, has been secured as assistant sanitary engineer for the State Board of Health, effective April 1st. He comes to the work with the State after a number of years of successful experience, and with a splendid reputation. He is a University of North Carolina graduate, and in addition to his engineering training he has done considerable work in chemistry and bacteriology that specially fits him for health work. He served during the war as a captain overseas.

The Bureau of Sanitary Engineering and Inspection, to which he is attached, is charged with the duty of

guarding the public water supplies of the State, with approving all new sewerage systems, with the enforcement of the sanitary privy law, and with the inspection of hotels, jails, convict camps and State institutions.

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### EXERCISE AND HEALTH

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Of course, the doctor will probably get you sooner or later, but why not make it later? Two miles of oxygen three times a day is not very hard on shoe leather, and it pays big in increased vitality, in the capacity for greater joy in living. Moreover, it makes the drug store a nonessential and increases the distance between you and the need for a doctor's services.

Most everybody is ready to make good resolutions, which they intend to keep, when acute need arises. Witness wise old Ben Franklin in private conversation with the gout which had struck him for a knock-out: "Leave me and I promise faithfully never more to play at chess, but to take exercise daily and live temperately."

But why wait for the emergency? Why not head it off? The wisdom of the ages is epitomized in that old proverb: "An ounce of prevention is worth a pound of cure." Particularly if you are beginning to reach that more or less indefinite period of life known as middle age does it behoove you to watch your step. Dr. R. L. DeSaussure, commissioner of health at Brunswick, Ga., has been making some special studies of the value of exercise to health. He declares that the rising death rate, after forty is a warning. Perhaps, what he has to say will help you:

"At the age of 40 the expectation of life is less now than it was 30 years ago. This is true for both men and women. Life expectancy during infancy and childhood has increased owing to more intelligent care of young children, to the introduction of diphtheria antitoxin, and other means of combating the infectious diseases and to more sanitary living. But the diseases of degeneration are

increasing, especially those involving the kidneys, heart and blood vessels, particularly among persons not employed in manual labor. One reason for this is the lessened physical and increased mental work entailed by our complex social fabric. More people are engaged in sedentary occupations than formerly. More nervous energy is required of a man. Deprived of the natural assistance which physical exercise affords in eliminating through skin and lungs the waste products of the body the kidneys become overloaded and fail. Lacking the normal assistance which working muscles give to circulation as they urge the blood and lymph onward in natural channels, and overloaded with food poisons which brain work cannot burn up as physical exercise will, the arteries become brittle and weak and the heart muscle flabby like the biceps of its unfortunate possessor. The florid business man succumbs to apoplexy perhaps; another big pasty-complexioned brain worker to nephritis; another to a fatty heart or to a chronically overtaxed digestion, all of which could have been postponed for many years by a moderate amount of daily exercise. As Eager has said: 'Most men, perhaps, athletic in youth, grow stale and deteriorate in physical tone after 30; and few grown women take sufficient active outdoor exercise.'

"That exercise is good for health and conducive to continued good health is an axiom. Exercise is necessary for all except those actually and acutely physically ill, at all ages, for both sexes, daily, in amount just short of fatigue. For the shop girl this may mean a 3-mile walk, for the clerk, an hour's gymnasium work after a rest from the day's grind, for the business man, two hours of golf, etc. But it should be taken daily, it should be compatible with the age and physique, it should be enjoyable and not a bore, and it should never be undertaken when tired or hungry.

"There would be fewer women in the doctor's waiting room if they took more exercise. Keeping house is not exercise. That's drudgery. The wo-

man who has no maid to take the baby out for its two-hour airing is fortunate. Lacking the necessary baby, the influence of the poodle is not to be despised.

"Heavy athletics are pernicious. They have no place in hygienic exercise. The after effects of severe exertion are harmful. An enlarged heart is not a safe organ; a greatly increased lung capacity is not only useless but dangerous in later life.

"After all, there is only one form of exercise that is available and suitable for all ages and conditions and in all seasons. Walking is the national pastime of at least one great foreign nation whose women are renowned for their beauty and vigor. The Life Extension Institute, an organization devoted to the purpose of keeping people well, says in one of its health letters: 'Walking is the surest method of securing daily exercise. Calisthenics for those who cannot arrange for a daily walk to and from business would prove beneficial, but few have the will power to carry out these monotonous and uninteresting forms of exercise. If you cannot play golf, or polo, or tennis, or fence, or paddle a canoe, or ride horseback, or swim, or dig in a garden, or climb the Alps, at least you can walk, walk, walk, and if you try no doubt you can do it in good company, on interesting highways and byways, thereby resting and cultivating your mind while working your body—a health producing combination.'

"Hinsdale says: 'The best medicine! Two miles of oxygen three times a day. This is not only the best, but cheap and pleasant to take. It suits all ages and constitutions. It is patented by infinite wisdom, sealed with a signet divine. It cures cold feet, hot heads, pale faces, feeble lungs, and bad tempers. If two or three take it together it has a still more striking effect. It has often been known to reconcile enemies, settle matrimonial quarrels, and bring reluctant parties to a state of double blessedness. This medicine never fails. Spurious compounds are



found in large towns; but get into the country lanes, among green fields or on the mountain top, and you have it in perfection as prepared in the great laboratory of nature.'

"We are in danger of deteriorating unless we hold fast to some of the old-fashioned principles of physical upkeep. The rising death rate after 40 is a warning."

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### GET-WELL-QUICK FAKES

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According to Professor Roy L. Moodie, writing in the *Scientific Monthly*, for February, some stone-age faker must have persuaded the cave men afflicted with headache to have holes scraped in their skulls with a piece of flint, so that the headache — supposedly a demon — could escape. Quite a number of fossil skulls have been found with these artificial openings in the "solid ivory."

This custom has persisted among certain primitive races in Peru, Bolivia, and Africa.

Was this headache cure a foolish superstition? Of course, but does the high-brow civilized man of today show much more intelligence in his treatment of headache, in his use of panaceas, patent medicines, and a long range of get-well-quick methods having no sound scientific excuse for existence? When successful business men and others demonstrating sound mental ability in all other respects fall so readily for health fakes and medical fakes of various kinds, or commercial catch-penny methods of treatment, instead of looking to science for guidance in such matters, do they not — relatively speaking — show far greater stupidity than the stone-age man with his silly headache cure? Does a man who walks into a drug store and asks for a headache powder, which is in the nature of knockout drops for the warning and safety-first mechanism of his brain and nervous system, display relatively any more intelligence than the poor

creature whose industrial resources consisted of a few flint tools?

Here are some of the causes of headaches which a headache cure may mask but never cure; syphilis, brain tumor, arterio-sclerosis, Bright's disease of the kidneys, infection of the nasal sinuses, eye diseases, eye strain from defective vision, ear infection, high blood pressure, anemia, malaria and other infections, neurasthenia, absorption of toxins from the intestines, etc.

How much common sense does an individual show who puts a silencer on the warning mechanism of his brain without first asking the message that it has to deliver? Most of the unpleasant symptoms affecting mankind are in the nature of warning signals; skin affections, for example, are seldom merely local troubles. They are symptoms of a disordered bodily condition, but the careless citizen with a skin eruption will buy some advertised nostrum, or walk into a drug store and choose something from its shelves in naive and implicit confidence that the factory where the nostrum was made can safely treat him, or that he can diagnose his own case and select and apply his own remedy, a thing that even a wise physician will hesitate to do for himself.

And so on down the whole list of human ills. For their relief we have diet fakes, exercise fakes, supernatural cures, and all sorts of irregular cults operating outside the breastworks of science, preying upon the credulity of mankind and trading upon human suffering.

When you find a self-styled expert proclaiming widely his individual methods of cure by diet, by exercise, by any other special methods, you may usually bank upon it that he is simply a commercial faker, grossly exaggerating whatever of value he may have to sell, and having nothing that is of value that is not known to orthodox science or to accredited and scientific practitioners working in these special fields, but refusing to promise cures or claim any special secret value for their methods.

There are no secrets as to the cause and cure of disease that one can afford to experiment with. What is really known about these matters is freely discussed in medical and scientific literature.

It is a heavy risk to employ an unscientific individual who is grossly exaggerating such merit as there may be in his methods and who may cause one to lose much valuable time through neglect to have scientific medical attention.

The examinations of the Institute have shown that few people are absolutely sound. We do not think it is safe for any individual to undergo a course of physical training or diet regulation by a layman until he has had a thorough physical overhauling and learned his needs and his limitations. It is not safe as a rule to employ even a well accredited and honest physical trainer or health culturist without such an overhauling. While in many cases such methods may be safe and bring substantial benefit, it is wiser to take no chances in view of the large proportion of people who need some special type of government.

Many patent medicine fakes have been exposed over and over again. Many quack practitioners have been exposed and the degree of their success before they were checked in their lucrative careers is a sad commentary on human intelligence and on the backwardness of the human race in acquiring information regarding the human body.

If so many crude, blundering, often absurd, methods of cure and treatment can gain support even among the cultured classes in the community it is clear that there is even greater danger from quacks masquerading under the cloak of health reformers, diet experts, or exercise experts. With the growing interest of the public in matters of disease prevention and of health building, such people are busily at work in this field and the public need protection from them.

It is true that medical science has a great deal to learn. It has made

many mistakes in the past, as have all other human agencies, but the leaders in scientific medicine insist that no exaggerated claims be made regarding what medical and surgical science can do. It is this conservatism, this honest refusal to promise cures that influences many people to employ instead a quack who will tell them what they wish to believe.

When a business man or manufacturer wants technical information, he usually goes to an accredited scientifically trained expert for it. He would not think of employing a man outside of recognized professional ranks to tell him how to test his steel or furnish him reliable trade formulas. He would not employ an engineer to build an important structure unless he could be satisfied of his professional standing, but when his own valuable body is in trouble, too often he will ignore the aid of accredited science and experiment with some plausible fake well known to be an absurd fraud by scientific men, whose advice and opinion he could readily obtain.

When one considers the vast sums that are annually expended in this country for patent medicines, more than \$100,000 annually, or medicines that are self administered, and the additional huge sums that are spent on various fake systems of health building, it is quite apparent that this state of affairs carries a real menace and may be summarized as follows:

- (1) Direct injury from the drug used.
- (2) Indirect injury through loss of time and masking of the real trouble.
- (3) Injury through delay in seeking proper medical supervision and treatment.
- (4) Injury through misapplication of even useful remedies or methods through ignorance of the underlying causes.
- (5) Needless waste of money. People will cheerfully pay a quack a thousand dollars when they would grumble over a bill of twenty-five dollars from the family doctor.—*From How to Live.*

## DOCTORS VERSUS WORMS

That nefarious type of practical nurse that hates to bathe the patient or change the sheets on the comfortable but groundless theory that such cleanliness may give the patient a "bad cold," is the chief exponent of the popular notion that when you don't know what else ails a child it is very likely worms.

Children and adults sometimes do harbor different species of worms in the intestine, and usually without having any of the alleged "worm symptoms" of the old grannies. But untold harm has been done, and much remorse brought to irresponsible or ignorant parents by the indefensible practice of assuming that an illness is due to worms and dosing the unfortunate child with nostrums purporting to be good for worms. We don't know how much good such medicines do the worms; we are not versed in worm pathology. But this Board feels that the State of North Carolina would be a great deal better off without any neighborhood worm specialists.

Your superstitious, ignorant, dirty, dangerous old gossip who "jest knows" the child has worms, no matter what the doctor says, and also knows what's good for the worms, is generally as bold to intrude upon a case of meningitis or appendicitis, or pneumonia, as any trifling ailment. In her vast ignorance and her long experience (in doing harm) she rushes in where angels fear to tread, and the sad part of it is that so many parents are just credulous and careless enough to permit such intrusion

at the very risk of the child's life.

The State Board of Health wants every citizen to know that the presence of worms can be determined in only one way, namely, by finding the worms themselves in the discharges from the body, or by finding their eggs with the aid of the microscope—a job for the doctor or the laboratory. No matter what symptoms a child shows, and no matter how eloquent and determined the neighborhood "Sairey Gamp" may be in her insistence that it is worms, the Board assures you that the diagnosis cannot be made from the symptoms alone, but only a guess, and generally a very bad guess at that.

Many times when some alleged "worm remedy" is administered to a child with symptoms assumed to be caused by worms, the child happens to recover in a few days and the ignoramus gleefully extols the medicine, although no worms have been brought away. Whatever the explanation may be in such instances, the Board assures you that no medicine which can be safely administered will dissolve or destroy worms in the bowel so that you are unable to recognize any worms discharged from the bowel. Medicines purporting to do any such thing are unworthy of serious consideration.

The treatment of worms, when it has been positively determined as above mentioned, that worms are present, is strictly a doctor's job, and the State Board of Health appeals to all intelligent parents to see to it that any such treatment is left to the good judgment of the family doctor.—WILLIAM BRADY, M.D.

**Diphtheria killed 273 babies in North Carolina in 1920. Toxin-antitoxin treatment prevents the sickness itself. Your county can and should offer this free to your baby. Person, Davie, Rockingham, Randolph, Caldwell, Martin, and Greene counties are protecting their babies.**

**Are not the babies in your county as good as these?**

J. S. M.

## CAN WE LOWER THE INFANT DEATH RATE FROM DIARRHOEAL DISEASES?

By ALDERT SMEDES ROOT, M.D.

Read before the Johnston County Medical Society, April 5, 1921.

Three thousand infants under two years of age die of diarrhoeal diseases in North Carolina each year. Our State has stood for years and still stands among the very first of all the states in her high infant mortality. Typhoid fever and smallpox have practically been eliminated from our midst, hook-worm disease no longer menaces the health of our communities, diphtheria is beginning to be controlled by the prophylactic treatment with toxin-antitoxin, and yet the deaths from summer diarrhoea, greater in number than all of these diseases combined, remains practically the same year in and year out with little, if any, improvement. In seeking for effective measures which might be instituted to combat this infant scourge, let us for a moment consider those factors which are responsible for its prevalence. Let us consider first the predisposing causes and attempt, if possible, to remove these. The most important of these by far is the state of health of the infant. In no other disease is the survival of the fittest so clearly exemplified, in none does the weakling have so poor a chance. The first duty, therefore, which devolves upon us physicians is to keep the baby physically fit. By what means and the institution of what measures can this best be done? Holt says that "Less than 5 per cent of the serious cases of diarrhoea are amongst the breast fed, and fatal cases amongst the exclusively breast fed are really rare, no matter how bad the surroundings or how ignorant the mothers. This being true, that 95 per cent out of every 100 cases of diarrhoea occur in bottle fed

babies, it is obviously our first duty to keep the baby upon the breast for the first year, and if this be a physical impossibility to make every attempt to have the mother partly nurse the infant through this period. In order to do this, premature weaning must be discouraged and measures for the maintenance of breast milk encouraged. Too many babies come under observation who because of vomiting and failure to gain or because of too frequent stools with mucous and curds and failure to gain, have been taken from the breast and placed wholly upon artificial feedings. I am sure that a very large number of these babies could have been nursed had the hours of nursing been properly regulated, the milk which may have contained a high fat percentage diluted by giving water or lime water immediately before the breast, and other simple measures. Again, too many babies are weaned completely when complimentary feedings from the bottle could have been given. The maintenance of the breast supply is of paramount importance, nor are the means to this end fully appreciated and preached by the medical profession. I do not mean that the profession does not appreciate the value of breast milk, for Dr. Sedgwick's statistics show that 80 per cent of the wives of physicians nurse their babies three months or longer, but the average physician does not go into the minute details and give the encouragement so often needed by these nursing mothers. The key-note of success in the maintenance of breast milk depends upon two factors: first, the complete emptying of the breast and

secondly, the stimulation of the breast glands by nursing the baby at regular intervals. As to the complete emptying of the breast at each nursing, any one who has been reared upon a farm knows that unless the cow is milked "dry" and the udders are stripped to express all of the milk the quantity of milk will decrease day by day in proportion to the incompleteness of the milking. This principal obtains equally well in the human being. One breast should be nursed at a time at a regular interval of  $2\frac{1}{2}$ , 3,  $3\frac{1}{2}$  or 4 hours, according to the indications in the individual case, and after nursing, the breasts stripped to more completely empty them. This is done by taking hold of the breast half an inch behind the areola with the thumb and middle finger and bringing them together and forward with milking motion. Sedgwick, in his far-reaching work on "Establishment, Maintenance and Reinstitution of Breast Feeding" has clearly shown that by this method breast milk may not only be maintained but may be reestablished after a period of weeks in which the baby was not nursed at all. Several other essayists have followed the lead and have reported results in accordance with these obtained by Dr. Sedgwick. Should the breast milk still be inadequate to enable the child to gain properly in weight, complimentary, not supplementary feedings should be given immediately after and not before the breast milk. It is to be emphasized that in no case should there be alternate feedings of bottle and breast.

What is the next most important step in keeping the baby physically fit? The answer is to give him, when it becomes necessary, artificial feedings which are well balanced in the three elements of food which are necessary to maintain growth and development, namely fats, carbohydrates (sugar), and protein. None of the proprietary foods will answer this purpose, and especially is this true of condensed milk, easily the most popular of them all. It is inexpensive, easily prepared, obtainable

from almost any drug store, and upon it babies frequently gain in weight. This gain is due to the high percentage of sugar in the formula, binding water to the tissues. These babies are in reality water-logged. They are flabby, pale and pasty and their muscle tissue small in amount. And this is what we would expect, for protein is the only element of food which repairs tissue waste and from which the red muscles are formed, and the amount of protein in such mixtures is far below the requirements of the baby. The fat content is equally as low as the protein, and it is the function of fat to supply energy, heat and body fat. The vitality of these babies fed upon such low fats and protein and high sugar mixtures and their resistance to diseases is upon such a low plane that they become a rich soil for bacterial invasion, and when this occurs they literally wilt as a tender flower under the summer sun. In prescribing such mixtures here again I would not incriminate the rank and file of the medical profession, for all too often they are recommended by an elderly matron in the community who probably has "raised" two children and lost four, and hence is thoroughly conversant with the very need of every baby. If we, ourselves, could universally realize and make the laity do the same, that the best substitute for breast milk is properly modified and sterilized clean cow's milk or should this not be obtainable, properly modified dry milk, then our babies would certainly be more physically fit and more able to resist ravages of "summer diarrhoea." That period of life existing between the end of the nursing age and the beginning of school life, has been appropriately called the "neglected age of childhood." It is just as important that these children should have well regulated diets and I would like to call your attention to the fact that the Bureau of Infant Hygiene, operating under the State Board of Health, has for distribution to any mother who may need them, situa-

ble diet lists from the age of 12 months to 6 years.

Other predisposing causes of summer diarrhoea of far less importance may be briefly mentioned. It is surprising how many babies are permitted to wear the abdominal band, and some even woolen undershirts, during the summer months. The reservoir of the blood in the body is in the splanchnic vessels of the abdomen and the humid heat retained by these garments must surely overheat the blood and often causes a reaction. Such reactions might easily pave the way for an intestinal infection. Could we not lessen the effect of summer heat by clothing the infant in the lightest possible fashion and by sponging him with cool water several times a day? Unhygienic conditions in the home, where flies swarm and where the importance of thorough sterilization of bottles and nipples is not appreciated, will always be a difficult problem. We must preach and continue to preach screening against flies, against the use of the unsanitary "pacifier," and cultivate patience in going into the minutest details of milk preparation and its care.

I cannot refrain from mentioning in this paper a few of the flagrant errors in the treatment of infectious diarrhoea which have been handed down from generation to generation. One of these is the daily purge by castor oil or calomel which is so frequently resorted to. If the initial dose, which should be given at the very onset, continues to be repeated, we are surely "adding fuel to the fire." Another common practice is to keep the baby upon nothing but barley or rice water, or broths for days. The food value of these is practically nil, while the tissue waste in the disease is enormous. After the first 12 to 24 hours of starvation food should be given, low in fat,

low in sugar and relatively high in protein. This indication is met by diluted skimmed milk mixtures, buttermilk mixtures, and best of all, lactic acid or protein milk. No other food is so generally appropriate as this latter and I should sincerely like to see this community lead the way among the smaller towns in the State, in devising plans whereby this produce could be made available for such cases during the spring and summer months. A third criticism of the every-day method of treating summer diarrhoea is in the administration of drugs. If we could realize that the treatment is practically altogether dietetic, that no drug has any specific action, that they serve in the vast majority of cases merely to upset the stomach, it would surely be a step forward. There is one exception, I believe that in every case sodium bicarbonate should be given to combat the relative acidosis brought about by the loss of bases through the stools. I am firmly convinced that colonic irrigations once or twice daily will do more toward controlling the frequency of bowel movements than any of the drugs in the Pharmacopœia. The diarrhoea is life-saving and if opiates are given so that this is checked, the poisons are pent up and the prognosis in any given case made bad. Can we not then, as a body of earnest medical brothers working shoulder to shoulder, lower our high infant mortality rate by encouraging maternal feeding and the maintenance of breast milk, by eschewing the use of proprietary foods, but rather seeing to it that the baby is placed upon a well-balanced diet, by preaching sanitation, by properly clothing the infant and finally by recognizing each one of us, that the disease is a constitutional one which depends almost solely upon the proper dietetic measures for its cure.

*"The children of a country are the capital of a country, and it is in the use and value of its capital that we may discern a nation's wisdom."*—BEAUCHAMP.

## MUSCA DOMESTICA; or JOHNNY-ON-THE-JOB

By FRANCIS B. HAYS, Oxford, N. C.

Flies are the best organized beings on the face of the earth. Some books may tell us that bees have their jobs down finer than any other "critters." I do not know much about bees, but I have had lots of experience with flies.

Go into a downtown restaurant at midday. Perhaps there are fifty tables in the place. At some, people are eating. On others there are dishes of remnants of food. Still others are fresh and clean. You sit down at one of the latter.

In the room, too, are a few flies—not many. Are these flies devoting their attention to the food remnants, as one would expect of unorganized flies? They are not. The head fly has divided them into squads. Now, a fly does not like to be disturbed at his meal any more than anybody else. At least, so far as I know, he doesn't. Yet, instead of settling down for a quiet gorge where he will not be molested, he buzzes around the plate of one of the diners, only to be shooed off whenever he alights. Carrying out the head fly's orders.

It is the head fly's job to see that his minions worry Mr. Man to the utmost.

These flies must be hungry, as they have been hanging around the place, on call, for nearly twenty-four hours. One would think that they would descend in a body upon the first table at which food was served. Not so. A squad of them is watching for you at a perfectly clean table. Whether they have been waiting there all the forenoon or were assigned to your table after the head fly had seen you bearing down upon it, my studies have not progressed far enough to enable me to say with certainty. But I know that they are there—a sort of reception committee.

In a less well organized body there would be bickerings, jealousies, slackerism. But not with the flies. A squad of flies assigned to a table at which the pickings is poor respond as loyally as if sent to the richest table in the place. I think they work in shifts—one shift on a rich table one day and on a poor table the next. This plan tends to keep them satisfied—to strengthen their morale. Such a thing as a squad deserting the table to which it has been assigned is unknown.

The persistence of flies is beautiful. A fly makes a foray on a dish. He is shooed off. He tries it again, and again is shooed off. He is hungry—half famished—and there is choice and easily accessible food in abundance all around him. Does he desert his post? Foolish question. Every one knows that he does not.

A child made to desist from some mischief he is up to will try it again to see whether or not his mother really meant it. If stopped again he will again try it, hoping that his persistence will wear his mother out. If the mother persists, too, the child will, after awhile, tire of putting her to the test, and so will leave off that particular piece of mischief for the time being. If the mother is consistently persistent the child will, in time, learn to obey her the first time she speaks.

That is where a fly is different from a child—a fly never stops.

That is to say, a fly never stops until he is dead. And any fly would rather be dead than a quitter. A fly can do anything without losing caste except quit. He would much rather drown in a plate of soup than have it said of him that he permitted a man at his table to drink his soup in peace. A fly goes to his death blythely

and gallantly; he shouts to the enemy, "Kill me if you will and can, but surrender I never shall." And he never does—you've got to hand it to him for that.

Solomon said: "Go to the ant, thou sluggard; consider her ways, and be

wise." M'soo Fabre does not seem to think so much more of the ant than he does of the grasshopper—or, as he calls him, the cicada—less, in fact. But maybe Solomon was so busy with other matters that he did not get down to the F's.

## THE HYGIENE OF FOOD

The function of food as fuel by which the human machinery is supplied with heat and energy, has long been understood and recognized and the response to the demands of hunger, is, of course, a fundamental principle upon which life depends. But within recent years scientists have investigated the uses of the various sorts of foods and this investigation has resulted in the decision that personal appetite is not a guide to the selection of such foods as the body needs in order to reach the height of physical efficiency.

The composition of the human body is such that each element needs certain kinds of food to induce growth, to replace the tissues worn out by daily use and to enable the body to do its work through such involuntary processes as the heart, the digestion and similar functions as well as to meet the voluntary demands which we put upon it by our work and the regular routine of living.

The foods that supply these needs are of different groups and while we "cannot always say that one thing we eat builds bone, another keeps the body fluids in healthy condition and still another furnishes energy for our work," we do know that the body demands protein and different kinds of mineral matter. The former, which contains the nitrogen necessary for building flesh and muscles is found in animals and plants; in milk, cheese, meat and eggs, as these foods are known to furnish an adequate amount of proteins.

Vegetables and fruits contain valuable mineral matter which the body

needs for building purposes just as it needs proteins, and, therefore, vegetables and fruits are a necessity in our diet if we would choose to supply the body with the foods best fitted for its needs.

Among the minerals contained in fruits and vegetables are iron, lime and phosphorus and unless the diet includes fruits and vegetables these elements are not taken into the body in any other way.

Most fruits and vegetables supply little protein, but as meat, milk, eggs and cheese are rich in proteins it will be seen that a mixed and varied diet combining all of these essential materials is demanded if the bodily needs are to be properly met.

In addition to the chemically recognized and analyzed bodily needs as outlined in the foregoing, it is now generally understood that the body requires yet another element to maintain its efficiency and this element is called "vitamines"; three forms of vitamins being now regarded as necessary to health.

### The Essential Vitamines

These three forms of vitamins are defined as follows: "The vitamin found in milk in connection with certain mineral fats and organs, such as liver and leaf vegetables, is called Fat Soluble A; another vitamin found in vegetables and fruits and in milk as well as in many kinds of food, is called Water Soluble B; and the third, found in fresh vegetables, fruits, milk and meat, is called Water Soluble C. This latter has only recently been recognized by scientists



and it is called "anti-Scorbutic Vitamine," because it is necessary in the diet to prevent scurvy.

From this it will be seen that the first essential rule to follow in diet is to have the diet as varied as possible and to include in it not so much those foods which appeal to the personal taste as those which contain the necessary food elements; those which furnish the principles of growth for fuel and those which give bulk; in short, we should "eat to live" and not "live to eat."

Milk, because it contains proteins, fats and minerals in combinations easily digested and used by the body, is the indispensable food absolutely necessary to all ages.

Meat, poultry, game fish and legumes are classed with milk and eggs because all furnish proteins, but of this list milk and eggs are the most efficient foods, and if used freely take the place of meat.

Many diseases hitherto considered to be of obscure origin are now known to be caused by inefficient diets; this may be corrected by a proper choice of foods, the lack of which does not in general result from poverty, but from a failure to understand the bodily requirements.

Women, who are the world's home makers, should give to this subject careful attention, because a knowledge of the food needs of a family means health and strength for that family, while the reverse is equally true.

Again, women should safeguard their own health because on that rests the cornerstone of the health of future generations.

Young women and girls desiring to attain efficiency and supremacy in intellectual, industrial or domestic fields will do well to make a careful study of diet in its relation to health; no other subject is so fertile in its possibilities, while few subjects are so generally ignored or neglected.

(Contributed by the Department of Nursing, Southern Division, Red Cross.)

### BABY NEEDS EXTRA CARE IN SUMMER TIME

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The baby needs extra care and watching during hot weather. It is not hot weather alone, however, that makes babies sick in summer, but mainly the effects of hot weather and their food. For this reason there is no better and safer food for babies than mother's milk. Babies should not be weaned in the summer, unless the doctor orders it, and then his advice should be followed in preparing their milk and other food. Buy the best and cleanest milk you can get and keep it cool and covered.

Babies often cry because they are thirsty, or because they are getting too much food, or because they are hot. Give the baby all the cool, boiled water it wants. Boil the water for twenty minutes and keep it cool and covered. Have it fresh every day. Dress the baby for comfort in hot weather. On hot days leave off its dress and see that its arms and legs are free to the air.

Fresh air is most important to the baby's health and comfort in the summer. Keep it out in cool, shady places as much as possible but free from flies and mosquitoes. Have the bedroom windows wide open at night.

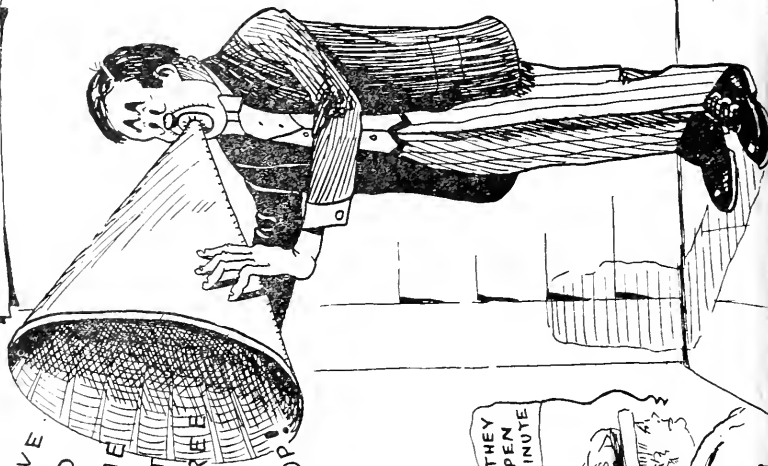
Bathe the baby in cool water at least once a day, or oftener, in warm weather. If it has prickly heat, put a teaspoonful of bicarbonate of soda in the bath. Use a good powder after the bath.

If the baby is sick, stop feeding it altogether. Give it water instead and see the doctor at once. Don't let the neighbors tell you what to do.

Remember that regular feeding, sleep, fresh air, care of all foods, plenty of cool, boiled water to drink, clean, dry clothes to wear, cool baths, and the doctor when the baby is sick, will save the baby during the summer months.

CALL THE LAST  
PERSONS WHO HAVE  
NOT BEEN VACCINATED  
AGAINST TYPHOID!—THE  
ONLY SAFE GUARD AGAINST  
FEVER! ABSOLUTELY FREE!  
NOW IS THE TIME!  
HURRY! HURRY! HURRY!

ANTI-  
TYPHOID  
DISPENSARY



IN TIME  
OF PEACE  
PREPARE  
FOR FEVER



GUESS THEY  
WILL OPEN  
IN A MINUTE

BEST  
THING I  
KNOW OF

SURE  
THING—  
I'M GOIN'  
TO!

GOIN' TO  
TAKE IT  
BILL!





# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

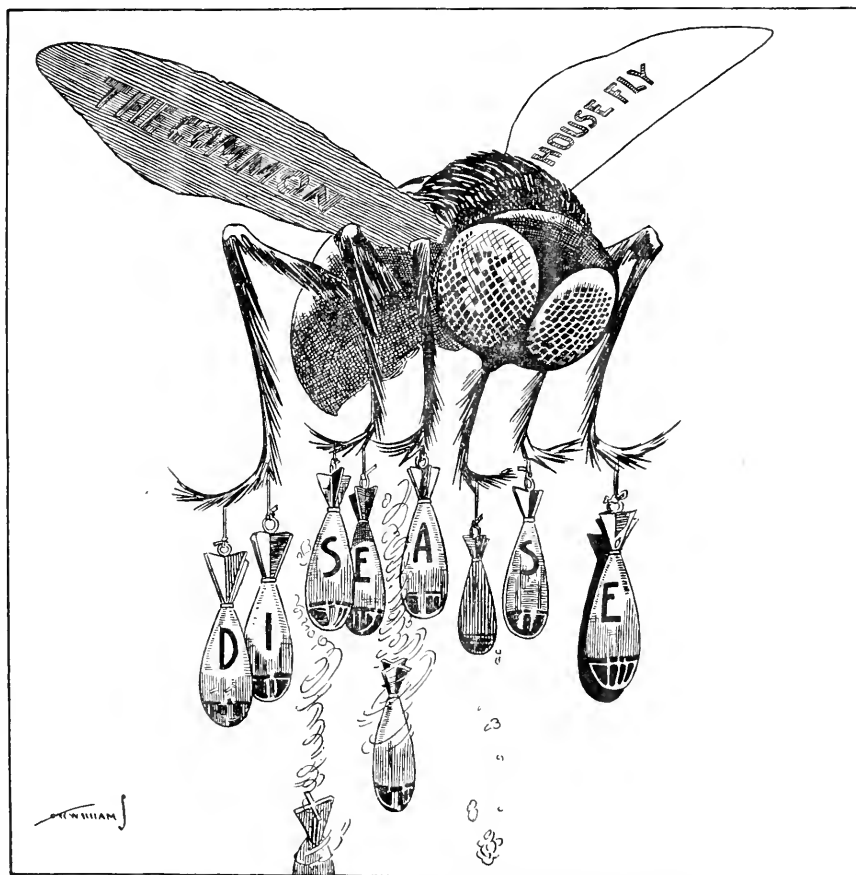
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Vol. XXXVI

MAY 1921

No. 5



## AN ENEMY TO MANKIND

It slays the tiny baby at mother's breast. Happy, joyous youth falls victim to poison it spreads. The strength of adult life is of no avail. The fly is no respecter of age, of sex, of color. It is the enemy of all. It must be fought and conquered.

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## FREE PUBLIC HEALTH LITERATURE

The State Board of Health has a limited quantity of literature on health subjects for free distribution. If you are interested in one or more of the following subjects, or want same sent to a friend, write to the State Board of Health for free literature on that particular subject.

WHOOPIING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
CARE OF THE BABY  
FLY PLACARDS  
TYPHOID PLACARDS  
TUBERCULOSIS PLACARDS

CLEAN-UP PLACARDS  
SPITTING PLACARDS  
SANITARY PRIVIES  
WATER SUPPLIES  
EYES  
FLIES  
COLDS  
TEETH  
CANCER  
CATARRH

MALARIA  
SMALLPOX  
ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES

## LETTERS FOR MOTHERS

Rose M. Ehrenfeld, R. N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These have been approved by the medical profession. They give simple directions for care during pregnancy and confinement. They will be sent upon application to the State Board of Health. Give approximate date of expected confinement.

## THE HEALTH BULLETIN

The Health Bulletin will be sent each month without charge to any citizen of the State desiring it. If you have a friend or neighbor who will be interested in it, send their names. When you have finished with your copy, hand it to some one else so that its usefulness may be increased.

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## DOES TYPHOID VACCINATION PROTECT?

The most interesting extensive recent epidemic of typhoid occurred in October and November of last fall, 1920, in Salem, Ohio. In a population of 10,305 there were 882 cases of typhoid fever, or one person out of every 11.6 of the population. Among 210 ex-service men, all of whom, of course, had been vaccinated in the Army, and who were between 20 and 30 years of age, there were three cases, or one case in every 70; whereas, among women of the same age, 20 to 30, there was one case in every eight—in short, typhoid vaccination increased the natural resistance to the disease and protection against it nine times. This is the big lesson for the public to be derived from the Salem experience, and today is the day of salvation. GET VACCINATED.—W. S. R.

## PROTECTION FROM DIPHTHERIA

Through Dr. C. A. Shore, director of the State Laboratory of Hygiene, notices are being sent to all physicians of the State announcing that toxin-antitoxin is now ready for distribution at the nominal charge of ten cents for three doses, the quantity needed to give immunity from diphtheria.

Toxin-antitoxin is different from antitoxin. The latter is used for treatment, and, in 1,000 unit doses, for immediate protection. The immunity rendered by the toxin-antitoxin mixture is believed to last for years, certainly as long as the immunity pro-

duced by typhoid vaccine. There is good reason to believe that diphtheria can be practically stamped out by the widespread use of diphtheria toxin-antitoxin mixture.

Three injections at intervals of one week are necessary to produce immunity, and it is suggested that the treatment be given to all children, and especially to those children between the ages of one and five years, and to all adults who have had diphtheria. A previous attack does not confer immunity, but is evidence of susceptibility.

The toxin-antitoxin mixture is very expensive to produce, each series of three doses necessary for one treatment costing the State Laboratory something over one dollar. The manufacture of it was made possible by an appropriation given by the last session of the General Assembly. In order to guard against waste in its use the nominal charge of ten cents has been decided upon.

The toxin-antitoxin mixture manufactured by the State Laboratory has been tested by the experts of the New York City Laboratory, who were the pioneers in this work, and they have given assurance of its reliability.

Anticipating that the laboratory would be able to supply this additional weapon against death from a preventable disease, nine counties in North Carolina have already signed contracts by which the immunity treatment will be available, without any charges whatever, to all their citizens during the summer this year. The campaign to render the people immune from diphtheria will be carried

along at the same time as the anti-typhoid campaigns. The counties that have already arranged for these free clinics are Person, Rockingham, Greene, Davie, Caldwell, Martin, Warren, Randolph and Stanly.—R. B. W.

### A LESSON FROM DUPLIN

From Duplin County comes the story of a family that paid heavily because of failure to take advantage of free treatment offered to prevent typhoid fever. Nine members of the family were stricken with the disease. Five died.

During the summer of last year the State Board of Health, co-operating with the Board of County Commissioners, conducted an anti-typhoid campaign in Duplin. Vaccination was made available, without charge, to all citizens of the county. None of the members of the family in question cared to take advantage of the opportunity presented.

Subsequently a daughter of the family went on a visit and contracted typhoid fever. Other members of the family visited the sick girl and after returning home were stricken. The disease spread until every one of the nine members of the family developed typhoid. In addition, a nurse employed to care for the sick also developed the disease. Ten people were desperately ill with a preventable disease. Five died.

This was an unusually severe "family epidemic." The pity of it is that the ten cases of illness and the five deaths could have been prevented.—R. B. W.

### HEALTH THE FIRST SUBJECT

Therefore, the first subject in the curriculum of the high school today should be health—the care of the body, the temple of the divinity within. I do not believe the child at birth is evil. Good habits as well as bad habits, truth-telling as well as lying, are the

results of training; and a sound body and good health are in the main essential to good character. Therefore, I believe that the schools of today should make it a creed that the care of the body and the preservation of health is a divine command, and that an epidemic of typhoid fever is just as immoral as gambling at horse races, and to damage the body in any way, either by drunkenness or licentiousness, is just as great an evil as to steal another man's goods. Therefore, the question of health that is now receiving so much attention from the head of our educational forces should be made a moral issue in order to stir the emotions and stimulate the thinking of the child. The material for this subject is already at hand, but it will probably have to be rearranged in order to enable the teachers to place the emphasis in the right place.—(From an Address by Hon. E. C. Brooks.)

### HEALTH OF SCHOOL CHILDREN

An especially able and capable young lady teacher, principal of a three-teacher school in one of the best farming sections of a neighboring county, a few days ago sent in a report to the department of Medical Inspection of Schools of the State Board of Health which deserves more attention than burial in the files of an office. This report is the recorded result of a preliminary physical examination of the pupils of the school by the teachers.

In the first place, as already stated, the teachers are most capable, the community is a good one and the people take pride in supporting their school; and yet of 128 pupils enrolled, there were only 95 present and examined by the teachers at the time the examinations were made. Of the 95 children examined, 77 or 81% have decayed teeth. Of the whole total only 7 had ever visited a dentist. Fifty-five

of them, or 57% had never used a toothbrush. Most of the others answered that they used a toothbrush "seldom" or "occasionally." None of these children live more than fifteen miles from at least ten competent dentists. What is the cause of such a situation? Forty of them complained of chronic throat trouble, and 22 have defective vision. The above facts are serious enough; but by far the most discouraging feature of this survey is the discovery that 37 of the 95 children are grade repeaters. More than one-third of them, 39% to be exact—are forced through necessity to repeat their efforts. Now, if those children had their handicaps removed, the services of one of the teachers could be dispensed with and two months added to the school term without additional cost. In other words, the school would cease to be a detention camp for defectives. The reader may think this an exceptional situation. It is, in that the record is better in many respects than many hundreds of schools scattered throughout the length and breadth of the State, both in town and country. The big question, and one that we pass on is, What can be done about it?—G. M. C.

### TREAT YOUR TEETH FAIRLY

Considering how much work you require of your teeth, and how very important a part they play in keeping you on the topside of earth, do you treat them fairly?

Do you clean your teeth when you brush them, or do you simply go through the motions? In fact, do you thoroughly clean them at all?

Many people pretend to clean their teeth by passing the bristles of a brush hurriedly across them crosswise a few times maybe once a day, and seem to think that this is all that is required. Such a method is at most a pretense. It really is of little use.

The best way to clean the teeth is to place the bristles of the brush firm-

ly against the teeth and with a rotary or scrubbing motion go up and down the surface of the upper and lower teeth both outside and inside, and up on the gums. After every bit of the surface of the teeth is thoroughly brushed in this way, cleanse the mouth thoroughly by forcing water between the teeth several times to dislodge any particles of food.

To keep the teeth in good condition, to preserve them and prevent decay, they should be cleaned first thing in the morning, last thing at night, and after each meal. A good stiff brush, made with tufts that will get into the crevices, with any standard paste or powder, used constantly will do the work. For safety, consult a dentist every six months. A little repair job is easier to do than a big one, and a little bill is easier to pay than a big one.—R. B. W.

### A. P. H. A. MOVES OFFICE

The American Public Health Association on May first removed its offices from Boston to New York in order to promote closer co-operation with other national health agencies. A National Health Council was recently organized, embracing nine leading national agencies whose major functions relate to health. One of the first steps of the Council was to arrange for the renting of two floors of the Penn Terminal Building at New York City. This building is at 370 Seventh Avenue, adjoining the Pennsylvania Depot. The following national health agencies will be housed there: American Social Hygiene Association, National Committee for Mental Hygiene, National Organization for Public Health Nursing, National Tuberculosis Association, American Public Health Association, Bureau of Social Hygiene, Child Health Organization of America, Maternity Center Association, New York Community Service, New York Diet Kitchen Association, National Health Council.

## HOUSE CLEANING DAY AT THE TRAVELERS' HOME

By H. E. Miller, C. E.

Among other measures for the advance of public health, the sanitary management and control of hotels—the homes of the traveling public—assumes a position of prominence.

The hotel houses only a very small percentage of the inhabitants of the community in which it is located. The persons accommodated by it, moreover, are usually transient, citizens of other communities or of other states. Therefore, the hotel by virtue of its function becomes an institution of vital interest and significance to the public in general. Those most interested in its sanitary management and control are not usually the citizens of the community in which it is located, and therefore have no voice in the enactment of local regulations for the control or improvement of its operation.

The only source to which the traveling public could appeal for relief from the insanitary conditions of the carelessly managed hotels, was the General Assembly. In making this appeal the traveling public was not alone but was joined and enthusiastically supported by hotel managers themselves. In fact, the amended law for the sanitary management and control of hotels was drawn up jointly by representatives of the traveling public and hotel operators.

The execution of this law which was enacted by the last General Assembly, was delegated to the State Board of Health. Detailed rules and regulations have been formulated and after being approved both by the traveling public and by representatives of hotel operators, were adopted by the State Board of Health.

The rules govern the vital points of

sanitation only, no attempt being made to regulate in any way rates or provisions for the general comfort of guests. The points particularly stressed in these rules are, general cleanliness, food handling and serving, control of the fly nuisance, control of vermin, cleanliness and changing of bed linen, ventilation of sleeping rooms, safety of water supply, safety of milk supply and sanitary toilet facilities.

Regular inspection of hotels will be made by inspectors of the State Board of Health. In the inspection of hotels all points will be carefully noted and recorded on a suitable score card with a numerical value for each item. The total score will be added up and compared on a percentage basis with complete compliance with the regulations in every detail rated as 100. A certificate bearing the percentage rating obtained on the score card will be posted in a conspicuous place in the lobby of each hotel. Guests will then know at a glance the poorly operated hotel from the better operated one. Not only is a fair and just scoring an advantage to hotel guests, but it is a protection to the hotels themselves, because in this way each hotel will be given its due measure of credit for the degree of sanitation accomplished in its management. In the absence of an adequate scoring or rating system, the well operated hotel must share in the criticism of the poorly operated ones. The enterprising hotel manager will now be relieved of his unjust burden of criticism given hotels in general, which he has been forced to bear because of the negligence and carelessness of his less enterprising neighbor.

Although the hotel is an institution



which serves the public to a greater extent than the community in which it is located, its facilities and operation are nevertheless matters of vital importance to the development of its home town or community. A community is not considered a town until it is provided with a safe and adequate public water supply and sewerage

system. It is often the case that the development of an otherwise progressive town is retarded because of an unfavorable impression made upon visiting representatives by the first place visited, the hotel. The citizens of any community therefore cannot afford to permit or condone a hotel that is not a credit to the community.

## AUTOBIOGRAPHY OF A BIRTH CERTIFICATE

By Dr. F. M. Register

I am a beautiful yellow sheet of paper with just lots of questions written on me that are to be answered by some doctor or midwife about some little boy or girl that is going to be born into this good old world some day. I was born down in Raleigh and sent out by the Bureau of Vital Statistics to a beautiful lady who is called a local registrar. She will give me to some doctor or midwife.

Oh my! The local registrar has given me to old Aunt Becky Good who can neither read nor write. I am afraid I will never get back to Raleigh again.

I have arrived at Aunt Becky's house and have been carefully folded and placed in the tray of Aunt Becky's trunk along with a cake of green soap, a nail brush, a tube of white vaseline and a package of nitrate of silver solution. Aunt Becky said, "Now you lie dar, along wid de t'ings de new health nurse tol'me to git, for I shore is gwin to need you soon."

I have been lying in Aunt Becky's trunk tray for three days and nights wondering and thinking when I will become a real birth certificate of some boy or girl and how important I may be. It may mean a fortune to the boy or girl whose birth certificate I will be. A fortune may be left to

some one and only by me can they tell to whom it belongs.

At last one rainy night I heard a call at Aunt Becky's door. She gets up, crosses to the door, talks a few minutes to some one, comes back, dresses, and opens up the trunk. The things the nurse told her to get she carries with her. I am pushed to one side and the trunk closed. I am afraid Aunt Becky has forgotten me. I feel very sad. I am afraid the birth of some boy or girl will not be registered and in after years will miss many things on account of this. And I am also afraid those people in Raleigh will indict Aunt Becky for not reporting a birth and make her pay out a lot of money. She has a kindly face and I have begun to love the dear old mammy.

Next day about ten o'clock I heard Aunt Becky's steps. She comes in and raises the trunk lid and picks me up carefully and says, "Come on honey, las' night I was in sich a hurry I clean forgot you." Aunt Becky carries me to Miss Rachel Smith who has been a school teacher and says "Miss Rachel, I want you to fill out this 'tificate for the purtiest little brown-eyed baby you ever seed, and I want it writ with ink too."

Miss Rachel goes over every question and fills me out most carefully.

She says, "Aunt Becky, you are a midwife worth while. This little girl will bless you some day for having her birth registered. I am glad to fill it out for you, Aunt Becky, for I feel like I am doing a great service to this little girl."

Aunt Becky carries me at once to the beautiful lady who is the local registrar. Aunt Becky knows that she has only five days in which to carry me in to the local registrar. I am laid on the table by the lady, numbered and copied in a book. The lady says "Aunt Becky, I love to copy your certificates, they are all written so plainly and you always have the name of the baby." Aunt Becky says, "I sho' try to do my duty. I gets Miss Rachel to write for me and I tell the folks they must give me the name of their baby. No use studying about a name always."

I am put in a large envelope with a lot of other certificates, some of them are white, that means that somebody is dead, but that is another story I will tell you about some other time.

Promptly on the fifth of the month, the beautiful lady mailed us to the

Bureau of Vital Statistics, at Raleigh. I am sorry to say that some of my companions are not named and a great many important things have been left off.

When we reach the Bureau of Vital Statistics, we are placed on a table along with 6,000 other yellow certificates and 2,500 white certificates. I heard a lady say there were 8,634 birth certificates received in March. The envelopes we are in are opened carefully by a young lady who arranges us according to months and counties, towns and townships. Each one of us is gone over carefully and if there is anything missing on any of us we are given to another young lady who writes to the doctor, midwife or parent about us so that we may be completed. We are worth fifty cents each to the beautiful lady who is local registrar. Later we are sent down to the binders and bound in books of 500. We are then indexed and copied, copies being sent to Bureau of the Census, Washington, D. C. We are then placed in a fireproof vault to be kept against the time when the little boy or girl whose certificate we are shall need us.

## PROGRESS IN SANITATION

By H. E. Miller, C. E.

Webster defines the word progress as "a forward movement toward completeness or perfection" or "The cultivation of man to the highest point of possible attainment." The people of North Carolina have improved on Webster's definition of progress, and have defined it in words that every man, woman and child can understand. North Carolina's definition of progress is, "Health, Education, Roads, and Agriculture." This definition is voiced in Governor Morrison's inaugural address, when he made Health, Educa-

tion and Roads the main topics of his address.

The General Assembly of North Carolina endorses this definition, because it has never failed to pass, almost unanimously, without party lines all measures for the protection of the public health and the improvement of the educational system. On the matter of roads, such discussion as arose was with regard to the means of accomplishment and not the object.

The courts of our state have long ago accepted the definition as stand-

ard. This is evidenced by the fact that Superior Court judges of North Carolina, seldom fail to charge the grand jury with an investigation of the public school system and sanitary conditions of the courthouse and county institutions. It is only with the first part of the definition, however, or health, that this discussion will deal. Since the entire field of health is too broad to be covered in one short discussion, only one of the most important public health measures, sanitation, will be considered.

Sanitation means cleanliness, and since it is said that "Cleanliness is next to Godliness," it must be a moral virtue as well as one of decency to practice cleanliness in one's daily life.

What greater indication of progress could be asked than that North Carolina will soon lead the world in cleanliness? As proof of this fact we need only recall that the 1919 General Assembly enacted a law making it a criminal offense to maintain an open surface privy within 300 yards of any other person's residence. This law is drawn in a most business like manner and provides for a corps of inspectors to enforce it. It is most interesting to note the progress made by the people of North Carolina in eliminating the source of the filthiest of filth, the open surface privy. The inspectors have not been able to keep up with the requests made by the citizens and public officials of various towns asking for an inspection to be made. The response has been so general, that in the whole state, with over half a million people residing in towns and villages that come under the requirements of the State Sanitary Privy law, it has been necessary to prosecute only 347 persons for failure to provide their homes or tenant property with sanitary facilities. In only one instance was it necessary to inflict the full penalty of the law, 30 days on the county roads. The judge who rendered this verdict gave to the citizens of his community,

and to the state at large, a practical demonstration of his definition of progress.

A few years ago, filthy open surface privies were common in North Carolina, as well as many other states. During the summer months flies swarmed in disease-bearing excreta, and carried this filth, containing disease germs, to the food in the neighboring homes. Thousands of infants faded and died of diarrhea and dysentery and fond parents mourning the loss of a loved one never once thought of laying the blame on the filthy open privy and buzzing flies. There was a day when there were communities in North Carolina, commonly known as typhoid fever centers, where scarcely a day passed in the summer season that the dread disease did not claim a new victim. Yet the principal cause, the open privy, was allowed to remain and with each new victim became more deadly, and people still considered a sanitary privy foolishness and sewerage a luxury.

We have just been indulging in sad reflections of bygone days but what a feeling of satisfaction it affords us to compare such conditions with our conditions of today. A case of typhoid fever is now a rarity, and the community that cannot boast of not a single death from typhoid fever during the year is ashamed of itself. Since the first of October, 1919, people have been building sanitary privies and constructing sewerage in every town and village in the state. An open surface privy in a town or village of North Carolina is almost a thing of the past and the day is near at hand when an insanitary privy in a town or village of North Carolina will be as hard to find as an iceberg on the coast of Florida.

The passing of the insanitary privy is closely followed by the disappearance of typhoid fever. The report of the Bureau of Vital Statistics shows that in 1920 there were less than half the number of deaths from typhoid

fever, as compared with the best record for any preceding year.

When the insanitary privy, enclosed in a glass case, is labeled, "A relic of the dark ages, once man's greatest enemy," and accorded a prominent place in the State Museum, and when

the State Registrar of Vital Statistics can write "zero" at the bottom of the page labeled, "Deaths from typhoid fever," then, what a day it will be. We can say in the terms of Webster's definition, we have attained the goal of PROGRESS in sanitation.

## THE BELLAMY MARRIAGE LAW

One of the important laws enacted by the last session of the General Assembly was "an act to regulate the issuances of licenses to marry and providing for the physical examination of applicants." The bill was introduced in the House of Representatives by Representative Emmett H. Bellamy of New Hanover County, and from its author has commonly been termed the Bellamy Marriage Law.

Briefly the law provides that certificates of physical examination shall be presented to the register of deeds by both applicants for a marriage license, the certificates to be signed by a reputable physician in the county where license is to be issued, the certificates to show that the male applicant is free from a venereal disease, that both applicants do not have tuberculosis in an infectious stage, and that neither has been adjudged an idiot, imbecile or of unsound mind by a court of competent jurisdiction.

The following is the text of the law which became effective March 5, 1921:

*The General Assembly of North Carolina do enact:*

**Section 1.** No license to marry shall be issued by the register of deeds of any county to a male applicant therefor except upon the presentation by the said male applicant of certificate executed within seven days from the time of the presentation of said certificate to the register of deeds as hereinafter provided, showing the non-

existence of any venereal disease, the nonexistence of tuberculosis in the infectious stages, and that the applicant has not been adjudged by a court of competent jurisdiction, an idiot, imbecile, or of unsound mind. No license shall be issued to any female applicant who shall not present a certificate showing the nonexistence of tuberculosis in the infectious stages, and that she has not been adjudged by a court of competent jurisdiction to be of unsound mind.

**Section 2.** Such certificates to be executed by any reputable physician licensed to practice medicine and surgery in the State and who shall reside in the county in which said license to marry shall be applied for, by certificate of the county health officer of such county, whose duty it shall be to examine such applicants and issue such certificates without charge.

**Section 3.** Any register of deeds who issues a license to marry without the presentation of the certificate herein above provided for, or contrary to the provisions of this act, shall be guilty of a misdemeanor, and upon conviction shall be fined not less than two hundred dollars, or imprisoned thirty days, in the discretion of the court.

**Section 4.** Provided further, that any physician who shall knowingly and wilfully make any false statement in the certificate herein above provided for, shall be guilty of a misdemeanor, and upon conviction, shall be fined not

less than two hundred dollars, or imprisoned for not more than six months.

Section 5. No laws now in force relating to the issuance of licenses to marry shall be repealed or abridged by this act, except such as may be in conflict herewith.

Section 6. All laws and clauses of laws in conflict with this act are hereby repealed.

Section 7. This act shall be in force from and after its ratification.

The act as originally drawn and approved by the health committees of both the Senate and the House was amended on the floor of the House, and as finally adopted contained language that caused some misunderstanding. To clear up this latter Attorney General James S. Manning has issued the following ruling:

"The act is apparently drawn with full knowledge of our existing marriage law. As does that, it enforces its design by prohibition and penalties upon the officers and physicians who are to administer it, and not upon the parties to the marriage contract itself. Any marriage, then, which has been solemnized since March 5, the date on which the Bellamy act was ratified, is perfectly valid, though upon a license issued also since March 5 without the certificates required by the act. In other words, a marriage when performed by a justice of the peace, or minister of the Gospel, is valid though there be an illegal license, or no license at all.

"The Bellamy act forbids the register of deeds to issue a license to a male applicant unless the application is accompanied by a certificate that he has no venereal disease, no tuberculosis in its infectious states, and that he has not been adjudged by a court of competent jurisdiction an idiot, imbecile, or of unsound mind. The female applicant must present a certificate that she has no tuberculosis in its infec-

tious stage, and that she has not been adjudged by a court of competent jurisdiction to be of unsound mind. The term "applicant" in the statute in the connection in which it is used is somewhat obscure, but we think it should be interpreted as applicable only to those persons, male and female, for whose benefit the license is issued. The register of deeds who issues the license without the two certificates having been presented to him, is declared guilty of a misdemeanor and is subject to a fine or imprisonment. Any reputable, duly licensed physician, resident in the county in which the license is applied for, may make the certificate. The county health officer of such county must examine the applicants upon demand, and if he finds them fit, must give the certificate without charge. The physician who knowingly and wilfully makes any false statement in such certificate is guilty of a misdemeanor and may be fined or imprisoned.

"It is asked, though, how can the physician certify that the applicant has never been judicially declared of unsound mind? Many cases may be suggested, in which it would be impossible for the applicant to satisfy the certifying physician as to this point beyond cavil or doubt. The certifying physician is not, however, an insurer of the truth of statements in the certificate. All the law requires of him is that he should satisfy his judgment in each particular case, with the individual features incident to it, by the ordinary means accessible to him. He commits no crime unless he wilfully and knowingly makes a false statement, or makes such false statement recklessly without belief, or any fair and just ground to believe in its truth. A conscientious physician, and a large majority of them are, applying these general rules, will have little difficulty in dealing with particular cases."

## CONSTIPATION A MENACE TO GOOD HEALTH

In these days everybody believes in sanitation of the community. Pure food, pure water, efficient sewerage, clean streets, are believed in and desired by every intelligent citizen.

The menace to the individual, however, from insanitary conditions in the community is far less than the menace from insanitary conditions in his own body.

A clean skin does not necessarily mean a clean body. The lining of the food canal and of the bowels is nothing more than a continuation of the skin.

Under civilized, artificial conditions of living, this internal skin, as it were, is not always as physiologically clean as it should be. The sewage channels of the body are not always efficient in releasing its wastes. This condition of stagnation, or sluggish movement in the self-cleansing functions of the body, which we call constipation, is so common that it is accepted by most people as an inseparable feature of so-called civilized existence.

But, as we have often pointed out, the common lot is not the necessary lot. The average individual is far below his attainable condition of health and well-being.

This condition of constipation is not only an important factor in reducing the general level of health, but it is in itself often an index of lowered bodily condition.

### Cause of Constipation

The causes of this internal insantiation are manifold, but may be grouped under the general cause, Improper Habits of Living.

Heredity plays some part, as many people are poorly endowed at birth as regards their muscular and nervous systems. Left to drift to themselves,

they naturally develop bowel weakness and inefficiency. As maturity approaches, the bowel often sags out of place and refuses to do good work. Proper physical care and training in early life can, of course, transform many of these cases and protect them from such a fate.

The average individual, with good heredity, develops constipation because of the artificial conditions of his life. Lack of all-round exercise, faulty diet and neglect of the bowel function, are the prominent causes. But all of the manifold indulgences and errors of hygiene committed by the average individual assist to bring about a lowered condition of health, which itself reacts upon the efficiency of the intestine, and thus we have a vicious circle.

Bad health induces constipation and constipation induces bad health.

Another prominent cause of constipation is the use of laxatives and purgatives. In addition to ordinary home domestic remedies, there is a vast range of official, semi-official and quack alleged remedies for this widespread condition. It is so much easier to take a pill or a glass of mineral water than to study one's diet and properly modify it, that the average individual takes the course of least resistance with the result that the bowels become tired out through continually being whipped and spurred and finally absolutely refuse to move unless whipped and spurred. In aggravated cases, even drugs lose their effect. Many purgatives, even those commonly considered harmless, such as laxative salts and mineral waters are often very distinctly harmful, causing a chronic inflammatory condition of the bowel or aggravating the already existing inflammation

that is present in certain types of constipation.

The chief error in diet that induces constipation is the use of concentrated food. Such food leaves little residue or waste to stimulate the bowel movement. Here again we have a vicious circle, for food of this class—meat, eggs, fish, fowl, etc.—often putrefies in the intestines, with the development of very active poisons, and if bowel movement is retarded through the physical character of these foods, the danger of general poisoning from their decomposition products is directly increased.

Another dietetic error is the use of white flour and of grains that have been deprived of their shell or coating. A meat and potato and white-bread diet is ideal for inducing constipation. Lack of "roughage" or coarse vegetables, and fruit, is harmful, in that it deprives the bowel of stimulus and the body of elements necessary to health that are found in certain vegetables, in the skin of cereals and in fresh fruit. Thus a constipating diet not only interferes with nutrition but at the same time favors stagnation of the bowels, and the absorption of poisons formed in the intestines.

Under a hygiene diet, with a limited amount of meat and a proper proportion of vegetables, fruits and cereal food, the number of harmful bacteria in the intestine may be greatly reduced. It is no longer believed that all these bacteria are necessary to life any more than that the house fly is a "useful Scavenger."

Constipation brings other ills than poisoning or infection. The distention and displacement of the bowels often reacts upon the nervous system, circulation and liver. Local congestions, piles and many other complications often follow in the trail of obstinate, prolonged constipation. On the other hand, there are cases that apparently show little injury from even very pronounced constipation.

## How to Prevent and How to Cure

The prevention and treatment of this condition is not usually difficult, when the causes are fully understood. These preventive and remedial measures may be grouped as follow:

**First:** Regulation of the diet.

**Second:** Regulation of exercise.

**Third:** Regular attention to bowel function.

**Fourth:** Medical or surgical treatment.

The suggestions for the regulation of diet and exercise apply to the average case, where there is apparently no serious complication or underlying condition that requires special treatment.

Water should be taken rather sparingly at meals, but quite freely between meals, as well as early in the morning. Laxative mineral waters should not be regularly taken.

Fruit and fruit juices and laxatives are helpful. A couple of apples eaten in the evening will often prove effective. Other desirable fruits are citrous—fruits, figs, dates and prunes.

The use of Graham or whole-bread or corn bread and whole cereals is important.

The amount of meat taken should be strictly limited—not more than once daily. But vegetables, such as peas, beans, lettuce, parsnips, carrots, turnips, celery, oyster plant, cabbage, Brussels sprouts, tomatoes, salsify, Spanish onions, asparagus and spinach should be freely taken.

In ordinary cases, outdoor exercise, by means of sports—rowing, tennis, horseback riding, hill climbing, walking, is of course, with proper limits, very desirable. When these cannot be attained, mechanical exercise will do much. Over-exercise is harmful; constipation is not uncommon among athletes.

Deep breathing by the abdominal method, with a weight of two to four pounds on the abdomen which should

rhythmically rise and fall with the breathing, is helpful.

While in the standing position, thrust the arms straight above the head, then sway from side to side, moving from the hips upward, the arms loosely waving like branches of a tree.

Assume the standing position, but with hands resting on the hips, raise the right thigh until at right angle with the body, leg at right angles with thigh, thrust the leg straight forward to a horizontal position, then sweep the leg back to standing posture. Repeat with the left leg.

Persistent effort should be made to form a habit of emptying the bowels at the same time or times every day, preferably in the morning after breakfast. This habit established in childhood will continue through life.

Faulty posture during bowel movement is also responsible for ineffective emptying. Low closet seats insure physiological posture and when not available, the use of a foot stool may attain the same object.

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### A SECRET OF PERSONALITY.

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By M. Jessie Leitch.

"I can't eat porridge. And I will not try to like it. I hate it." The speaker, a girl of 14 or so, drew the bed clothes over her head and disappeared by way of ending the argument.

Her mother made a little despairing gesture and looked at father. He turned very red in the face and said, "Is that the way you bring your daughter up?" and stalked out of the room, as if washing his hands of the entire affair.

And the neighborly woman, who had daughters of her own, turned to the mother of the sick girl and said, "I wouldn't pay much attention to Melinda, my dear. She is only a child, and she thinks she dislikes porridge.

Perhaps she has had so much of it that she has been turned against it."

They were standing outside the sick room door, now, the neighborly woman having drawn Melinda's mother out of the room.

The sick girl had emerged from her muffling of blankets and was endeavoring to hear what they were saying.

"No. She never was much of a hand for porridge. And she has great notions about food. I can't make my children eat what's good for them. They are so set in their ways. They take after their father."

And as the two women went down to the kitchen the little sick girl called. "You needn't think I'll eat oatmeal porridge. I hate pasty, lumpy old stuff."

"Won't you go and lie down for a while? I shall stay until 10 o'clock, and it is scarcely 7. You look tired."

And the neighborly woman patted the tired looking woman as she spoke and gently pushed her toward the little downstairs bed room, where she knew she usually slept.

"You are so kind. I think I will, perhaps, I slept a very little last night. I was worried about Melinda. I'm always afraid of her getting galloping consumption, or something. She is so thin and white. And the doctor says she is undernourished. It must be from being away at school. She couldn't have eaten the right kind of food."

And very wearily and drearily the tired woman with the sagging shoulders who had remained on the farm that her daughter might go to a city school, went into the dingy little parlor-bed room and closed the door. As she shook up the coals in the kitchen range, the neighborly woman heard the creaking of the bed springs as the weary mother threw herself across the bed. A minute later she slipped into the room to throw a comfortable across her, to open the window a little, to sigh over her old friend



because she was so tired. And because the little daughter upstairs was less sick than foolish.

Back in the quiet farm kitchen the neighborly woman moved quickly from fire to cupboard, from pantry to table and back again. Placing double boiler on the range, she measured a scant quart of water into the upper part of the double boiler and added a teaspoonful of salt. When it was boiling merrily, she stirred in, slowly, a large cup of rolled oats, and when the mixture bubbled to the top of the boiler and threatened to go over the top, she placed it, hastily, in the lower part of the double boiler. And covered it tightly. Then she added a large spoonful of salt to the water in the lower boiler, knowing that if water in the lower boiler be strongly salted oatmeal will cook more quickly.

Then she went upstairs to the little sick girl, who was not very sick as a matter of fact. Only utterly spoiled. And as she freshened her bed and brushed her hair and braided it, and found a clean handkerchief, and bathed the child's face and hands with warm water, she talked gently to her. And won a promise from her to try to eat what was good for her.

Almost two hours later the neighborly woman drew the double boiler to the back of the range and removed the lid. With a fork she stirred the porridge, then thoroughly cooked, to let the steam escape. Then she served a small portion, in a pretty flowered bowl, placed it on a tiny tray, covered with a white napkin, added a tiny blue pitcher of cream and a little blue bowl of sugar. Then a spoon, a clean table napkin, and she slipped upstairs. And the little sick girl, after one reluctant taste, said with actual surprise in her voice. "Why, it isn't lumpy or sticky. And it tastes. I like it." And asked for more when she had taken all that was in the pretty bowl.

Which surprised her mother, when she awoke, into saying. "I think you

could coax a person into doing almost anything they don't wish to do."

"Not coax," murmured the neighborly woman. "Appeal is the word. Careful cooking is its own reward." Which sounds a bit mixed, but any woman who cooks and tries to take care of the sick in her own home will understand.

Don't give the baby patent medicine. If you feel you must use advertised remedies try them on yourself, or better still, on the dog. Let your family doctor attend to the baby.

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It took Ehrlich 606 experiments to discover a way to give a man arsenic enough to kill syphilis germs in his blood without running the risk of killing him. He called the result 6-0-6 or "salvarsan." In this country the United States Government supervises its production through the Hygienic Laboratory of the Public Health Service and calls it arsphenamine.

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The scratch of a lion's claw is almost as deadly as his bite, for he never cleans his nails, and he always carries under them rotting meat that is rank with deadly germs. Flies and water bugs do the same thing on a smaller scale, and "Don't forget," says the U. S. Public Health Service, "that they never wipe their feet."

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The U. S. Public Health Service calls attention to the fact that only twenty-three States have efficient birth registration laws; eighteen have imperfect ones; and five have none at all. Inability to prove age may cause all sorts of legal troubles later in life in proving citizenship, in voting, and in inheriting, for instance. Don't forget to make sure that the new arrival in your home has been registered.

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Good health makes the yoke easy, the burden light, and life one joyous song. Registration of births puts Community, your County and your State in its proper place.

### CORRECTLY NAMED

Visitor (to small girl hugging a large Teddy-bear whose boot-button eyes convey the impression of a pronounced squint): "Well, little girl, and what do you call your nice new bear?"

Small Girl (gravely)—"His name is 'Gladly,' same as the one in the hymn."

Visitor (mystified):—"What on earth are you talking about, child? Which hymn?"

Small Girl:—"You know. The one that says, 'Gladly my cross-eyed bear.'" —Tid-Bits (London)

### THE OLD ONES ARE THE BEST

One of the census men called at the home of a workingman in New York, noted in his neighborhood as a great reader and a wiseacre for statistics. He found the man poring over an encyclopedia.

"How many children have you?" asked the census taker.

"I have just three—and that's all there will be too," replied the man, looking up from his book of knowledge.

"All right, but why so positive?"

"According to this book here," said the man with deadly seriousness, "every fourth child born in the world is a Chinaman."

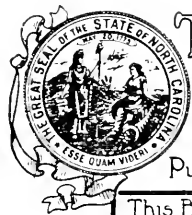
Good health is a free ticket to happiness, and registration of births and deaths is the first step in preventive medicine.

One iron spike may wreck a train. One insanitary privy may wreck a community. One Baby's name unregistered may mean a lost fortune to the baby.

Allenby captured 25,000 Turks in 1918. State Board of Health vaccinated 100,000 people in 1919, and 83,000 births were registered in North Carolina during 1920.



FOR THE BABY'S SAKE—SWAT THE FLY



# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

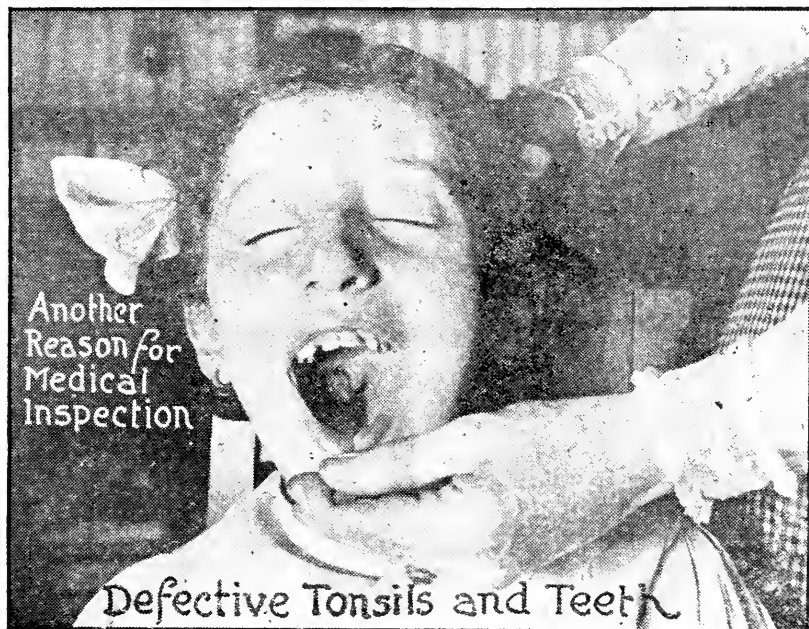
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**A** CHILD so affected can not possibly do the best work in school. Such a child is badly handicapped. Such defects left unremedied may result in serious impairment of health and the shortening of life. The medical inspection of school children in North Carolina is revealing thousands of children who are suffering with such defects. The State Board of Health feels that finding children so affected is only a small part of its duty. Thus far 42,627 have been treated in the dental clinics and 2,884 in the tonsil and adenoid clinics conducted by the State Board of Health under the management of Dr. G. M. Cooper, director of the medical inspection of schools. Large numbers have in addition been treated by private physicians. A well child grows into a healthy man or woman, and the State Board of Health believes that all should have a fair start.

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## FREE PUBLIC HEALTH LITERATURE

The State Board of Health has a limited quantity of literature on health subjects for free distribution. If you are interested in one or more of the following subjects, or want same sent to a friend, write to the State Board of Health for free literature on that particular subject.

WHOOPIING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
CARE OF THE BABY  
FLY PLACARDS  
TYPHOID PLACARDS  
TUBERCULOSIS PLACARDS

CLEAN-UP PLACARDS  
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COLDS  
TEETH  
CANCER  
CATARRH

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SMALLPOX  
ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES

## LETTERS FOR MOTHERS

Rose M. Ehrenfeld, R. N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These have been approved by the medical profession. They give simple directions for care during pregnancy and confinement. They will be sent upon application to the State Board of Health. Give approximate date of expected confinement.

## THE HEALTH BULLETIN

The Health Bulletin will be sent each month without charge to any citizen of the State desiring it. If you have a friend or neighbor who will be interested in it, send their names. When you have finished with your copy, hand it to some one else so that its usefulness may be increased.

# Health Bulletin

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Vol. XXXVI

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## PREPARING TO PREVENT TYPHOID FEVER

Currituck, Camden, Pasquotank and Perquimans counties are among those which already this year have made a start to lower their death rate from typhoid fever. Successful campaigns have been completed in these counties, and the excellent result is due to interest and cooperation on the part of physicians, county officials, civic organizations and the public in general.

Camden seems to hold the record, as one physician vaccinated 20% of the population of the county, while another has yet to report. In Pasquotank county over 4,000 were treated, while two years ago the number protected was only about 1,600. In Perquimans about three times as many took the treatment as did in 1919. These figures show the confidence that the people have in the treatment and to prove their determination to place North Carolina at the head of the progressive work of preventing sickness and saving lives.

If every doctor in the one hundred counties in North Carolina, could do in his community what Dr. W. L. Stevens did in Camden, we would get results. He gave three treatments, each, to 1,164 people among whom he practices. Every physician in the counties named above put his shoulder to the wheel and has done an untold service to the people. If 20% of the citizens of the State who have not taken the treatment for two or three years would do "as the folks across the sound" have done, North Carolina's record would be still better.

In Wake, Lenoir, Davidson, Robeson, Pitt, Granville, Forsyth, Cumberland, Northampton, Halifax, Wilson, Rowan, Wayne, Surry, Vance, Wilkes,

Edgecombe, Columbus, Craven, Bertie, New Hanover, Guilford, Buncombe, Cabarrus, Sampson, and Durham counties; and Asheville, Charlotte, Durham, Goldsboro, Greensboro, New Bern, Raleigh, Rocky Mount, Wilmington, and Winston-Salem, there are full time county or city health departments. One important service which can be rendered to your health department is the protection of your life from typhoid fever. These cities and counties put the responsibility for your having typhoid up to you.

Under the direction of the State Board of Health campaigns will be conducted during the summer in Brunswick, Person, Caldwell, Stanly, Davie, Martin, Rockingham, Greene, Watauga, Randolph, and Warren counties.

Every county can and should offer its citizens protection against typhoid fever. Are the local officials, and are you, doing all possible to save your life from death by typhoid?—J. S. M.

## TO KEEP WELL IN SUMMER

Health is largely a matter of habits. This is more true in the hot summer months than in other parts of the year. At this period, when the mercury is flirting with the stars health may be conserved and comfort increased by careful attention to some of the essentials of the daily routine. Look first to the diet, then to bathing, sleep, exercise, and recreation.

Most important of all is the diet. This is true all the year, but is emphasized by the hot weather. The diet should consist largely of raw and cooked fruits, raw and cooked

vegetables, cereals, milk and milk products, but very little meats. The amount consumed in summer should be less than in winter, and this applies with special force to meats, eggs, and pastries. Besides producing heat they tend to constipation and mental sluggishness. Drink much water, but not quantities of iced water. Above all watch the elimination of waste matter from the body. Avoid constipation.

Take a bath every day, or better still, twice each day. A cool sponge bath first thing in the morning on getting out of bed and tub bath at night before retiring will do much towards keeping the body in good condition, and will make for comfort as well. Tepid water will give more satisfactory results than either hot or cold water.

Sleep regularly at least eight hours. If practical, sleep out of doors on a sleeping porch. Arrange the sleeping quarters so as to sleep in as much moving air as possible. Forget about the alleged dangers of draughts. Nothing enables a person to withstand the heat of summer with ease quite so well as plenty of undisturbed sleep in the open air.

Exercise some every day, but use discretion. Open air games in the cool of the day are good both for the mind and body. Do not leave off walking because the weather is warm. Walk early in the morning or late in the afternoon. Walking is always essential to a high state of physical well being. It aids nature through perspiration to cleanse the body.

Recreation is just a form of mental and physical rest, and it is necessary to mental and physical health. It is something that may take many forms, depending upon the personal taste. Vacations at the seashore or in the mountains, picnics, short trips in the automobile, motorcycle or on the bicycle, camping parties—anything that will give diversion, that will break the monotony and grind and at the same time tends to bring into play muscles seldom used—will be beneficial.

These are some of the definite things for health and comfort and

pleasure in the summer. Here are a few "don'ts: don't talk hot weather and don't think heat; avoid as much as possible direct exposure to the sun unless your vocation is such as to have accustomed you to it; wear light-weight and light colored clothing; don't dissipate by overeating over drinking; go slow and do nothing in excess.—R. B. W.

### THEIR ACTIONS SPEAK LOUDER THAN THESE WORDS

In 1917 the General Assembly of North Carolina passed a law making it obligatory for parents, householders, and guardians to report to the county quarantine officers diseases about which no physician had been consulted. It was this same act that required physicians to report cases coming under their observation. What has been the attitude of the masses of our State toward this law—the masses who are ignorant of the cause, the mode of spread and the mode of prevention of contagious and infectious diseases?

The actions of our citizens speak for themselves. Facts have been established and facts show the people have done well. During the months of January and February, 1921, 8,788 cases of preventable diseases were reported. Of this number 6,133 were measles and whooping cough. Of these, 1,950 were reported to the quarantine officers by the householder. Parents reported about half the number of cases that the physicians did, counting not only whooping cough and measles, but all other diseases treated by them. These figures serve as an index of the spirit in which our citizens receive the law.

The people have heard the appeal of the State Board of Health, have accepted their responsibility, and are performing their duty well. This is but another citation of the many things the public are doing toward making the length of life longer in North Carolina. The North Carolina State Board of Health desires to commend our citizens for their very effective co-operation.

This record will stand the test of comparison with any other State in the Union. Not to any individual man or group of men, but to the citizens of North Carolina as a unit, belongs the credit for the record made in prevention of diseases.

"Their actions speak louder than these words."—J. S. M.

### HEAVY DEMAND FOR TONSIL CLINICS

"It looks like the busiest summer we have yet experienced," is the way Dr. G. M. Cooper, director of the medical inspection of schools for the State Board of Health, views the clinic phase of the work. Applications have been piling up for clinics to remedy the defects discovered through the medical inspection of school children. Two additional nurses were recently employed for field work to assist in carrying forward the work which has already resulted in the treatment of approximately twenty-five hundred school children who were afflicted with diseased tonsils and adenoids.

At the recent annual meeting of the Medical Society of the State of North Carolina the plan of the State Board of Health for conducting clinics for the removal of diseased tonsils and adenoids of school children was unequivocally endorsed. That the clinics are doing a world of good, and reaching children who otherwise would not be treated, is attested by numerous letters from many sections of the State. Dr. Cooper, who originated the plan that is being successfully followed, and who has been responsible for the conduct of the clinics, gives the following as two typical comments:

The first is a letter forwarded at the request of the writer through Mr. R. E. Price, the welfare officer of Rutherford county, which says: "I want to say that my little girl, Lillie, was operated on at your clinic held here last November and is doing well now. She complained of earache, headache, sore throat, and was ill in general before she was operated on at your clinic. Now she is well, never

complains, and is going to school regular. I am a poor widow with seven children and could never have paid for the operation. She would possibly never have got a operation if it had not been for the good work of the State Board of Health. Again I thank you for it."

The second is an official letter to another department of the State replying to certain questions in which Mr. Jarvis H. Allison, the welfare officer of Haywood county, says: "Now as to the tonsil and adenoid clinics. We have had two in which we operated on 125 children. This is a very fine piece of work. I know of three children who were pale, thin and stupid, who are now pictures of health and much improved intellectually as shown in school progress. I feel like taking off my hat to the State Board of Health for making it possible to have such a clinic for not a cent of cost to my county, and only \$12.50 to the man who could pay, and nothing to the man who couldn't. Haywood county appreciated the work of the State Board of Health."—R. B. W.

### A REAL MOTHER—A CLEAN BOY

The vast majority of mothers and fathers make failures of the highest mission in mother and fatherhood. They feed, clothe, and possibly give their offspring a common school education. The highest service they do not render.

Somehow the world has not yet learned the noblest thing parents can do is to keep clean the innocent baby they have procreated. When the boy or girl (for all girls are not what they should be) have been reared to be a clean young man or young lady, he or she will most assuredly be a gentleman or a lady, and, naturally, a Christian.

"Mother's Day" has recently passed and a happy mother received the following letter from her happy boy. How many mothers in North Carolina received such letters, and how many did their part to guide their boys along this path which does not lead to a double standard of morals?

DEAR MOTHER:

Of all the days in the year, this is the one day a mother really and truly wants a letter from her boy.

I know I have been a worry at times, but you will see very soon that your care and guidance has been the making of a clean man, for this is what I set my heart and mind on last summer.

I wish it were possible for every boy to have the guidance that you, the best mother in the world, have given me. I know that no other mother, anywhere, has taken the pains, or gone out of her way, any more to help keep her boy in the straight paths, than you have. And I am sure that no mother *can* do anymore than you have for me; so I'm taking this time to tell you how much your teaching has kept me from going wrong.

More than once I have started to do things, but then, all at once I thought of you and home, and I couldn't do them to save my life.

I want you to guide and advise me as long as I live, and I know no better way of expressing my appreciation.

Devotedly,

-----

This letter is quoted with great pleasure because the mother said the work of the North Carolina State Board of Health helped her to be the happy mother of this happy boy.—J. S. M.

### RECREATION NECESSARY FOR HEALTH

The Creator of the universe in His all-wise wisdom implanted in the minds of children the longing for play. Health and growth depend upon the exercise of muscles. The instinct for play, therefore, plays a large part in the development of each individual.

After childhood has passed there is a tendency on the part of most of us to suppress, or forget, this instinct for play. We get so busy striving for wealth or fame, or just trying to make a living, that we are apt to think of play as something unobtainable, something that we have not the time for. Therein we make a great mistake. We wear, make us what we are, adult to play as it is for the child.

Nearly all the degenerative diseases result from a lack of play. Mentally and physically we need recreation that really recreates, that relaxes tired muscles, that gives wearied nerves a chance to retain exhausted vitality. Exercise in the gymnasium is fine, but frequently it is too methodical, or else we overstrain. The more simple games, and particularly those that can be played out of doors, do the most good. In those we get the ideal combination of exercise of muscles, fresh air and sunshine, the combination which, taken regularly, means prolonged life and better life.

Health is a state of physical and mental and moral equilibrium, a normal functioning of the body, mind and soul. It is the state when work is a pleasure, when the world looks good and beautiful and the battle of life seems worth while. Health is the antithesis of disease, degeneration and crime. To maintain it we must obey the laws of nature which demand that there shall be a proper mixture of work and play, of rest and sleep. And of these we need to place particular stress on play.—R. B. W.

In the summer it is much better to start a little earlier, and not to hurry. Take your foot off the gas and go a little more slowly.

Be careful in eating. Do not gorge. Too much food is worse than too little, especially in summer. Eat fruit and vegetables. Remember that a meat diet is heating.

The first, the fundamental rule for healthful living in the summer is to keep clean, inside and outside. A bath every day is as important as the elimination of waste products from the body.

In hot weather wear light weight and light colored clothing. Discard heavy dark garments. Above all, give the baby a chance. Don't smother it in ruffles and flannels.

What we eat, what we drink, what we wear, make us what we are, especially in hot weather.



# THE TYPHOID HAND

By J. S. Mitchener, M.D.

Why do we speak of the typhoid hand? It is because people's hands, or rather their fingers, play such a great part in the spread of this disease from one person to another. You would really be surprised to see how typhoid fever is literally handed out by people to their friends.

## The Part of Feces

There is a definite source or point from which a disease springs and spreads. There is always a germ or poison which causes one certain kind of disease. A hen lays an egg which when hatched becomes a chicken, not a goose. A grain of corn doesn't produce a stalk of wheat. It bears an ear of corn similar to that which was planted. Likewise, typhoid fever must come from typhoid germs or poison in our system.

When we look for chickens, we go to the chicken lot. When we want corn, we go to the field where corn was planted. In the same way we expect to find typhoid germs in the feces or bowel discharges of people who have had this disease. When these germs are "planted" in a person they grow as the corn does in a field, only lots faster. Each germ makes other germs, as does the grain of corn.

The corn at harvest times is gathered and put in the barn to be used as food for ourselves and our stock. The typhoid germs pass out through the kidney or bowel discharges and are given by careless people to others. Those who receive the germs are apt to have the disease unless they are vaccinated to prevent it.

The bowel discharges may be heavily loaded with these germs. This is especially true when a person is sick with the disease, and even for several weeks after they recover the germs may be found in the discharges of those who have had typhoid fever.

Some of these carry the germs for life. The famous "Typhoid Mary" has caused 3 to die from typhoid fever and 54 to be sick — years after she got well herself. These people are called TYPHOID CARRIERS and they cannot be too careful about cleansing their hands, and should use only sanitary closets.

Because of feces carrying the germs of typhoid fever, and other diseases too, every one should have and USE a sanitary closet. Clean hands are necessary for the protection of our lives as well as better to look upon.

## The Part of the Fingers

Sickness and death often gets on our finger tips. Is it not very convenient to kill a man? There is but one way typhoid germs get on our fingers—they must touch discharges laden with germs. It has been said that typhoid germs and nothing else will produce typhoid germs. It is also understood that the best place to get them is from the bowel or kidney discharges of people who have or have had the disease. Our own fingers may get the germs on them and the germs will be carried to one's own mouth or to the mouth of another person by the handling of food or fluid that is eaten or drunk. Now you see why your doctor tells you when nursing a person sick with typhoid fever to wash your hands in water containing drugs which kill germs.

Now let us see another way fingers spread typhoid. A person has had typhoid fever and so far as he himself is concerned, he is well. But he carries the germs somewhere in his body. These germs are passed out through the body discharges. That person's fingers get soiled with the discharges when attending to nature's calls. His fingers are not washed and when food, etc., is prepared for others, the carrier sends his

disease laden filth through the mouth and into the bowel of the person enjoying the relishes.

True it is that hands are made to carry necessities but unfortunately they carry disease too. Clean hands will PREVENT SICKNESS, SAVE DOLLARS AND LIVES.

#### Part of Flies

Flies are all right in their place but where is their place? They are like the mischievous little boy—into anything and everything. They will be feeding upon the bowel discharges, found on the baby's napkins left exposed on the porch and the feces at the open privy or elsewhere. Then they take delight in parading across our food or bathing in fluid we drink. They carry anything they get on

their feet into our bodies this way.

#### Part of Fluid and Food

It has been plainly told to you that discharges from bowels and kidneys may be rich in typhoid germs, and that by our handling what we eat and drink with unclean fingers and by letting flies walk over our food and deposit filth on it, these germs get into what we eat and drink. It is the part of wisdom to be careful about what goes into your mouth and where it comes from. Demand a sanitary privy at every home in your community, swat the fly and take the treatment preventing the disease.

#### Remember

If you don't get human filth into your mouth you don't have typhoid fever and diarrhoea.

## PREVENTING CONTACT CASES OF TYPHOID

By J. S. Mitchener, M.D.

Typhoid season is here. Possibly you will have a case in your own home unless the members of the family have taken the three treatments which protect them against the carelessness of others. Or, likely you will visit some friend to assist in caring for their sick. Thus your life will be in danger, but to remove this, these suggestions are commended to you by the North Carolina State Board of Health. By following them, you may prevent many cases and some deaths besides protect yourself.

SUGGESTIONS to adopt are (1) follow the rules of the quarantine officer; (2) look to your doctor, not to the neighbors for advice; (3) urge every one in the family and community to take the treatment which prevents typhoid; (4) screen the room; (5) install a sanitary privy; (6) swat the fly; (7) let as few people as possible wait on the sick; (8) do not permit those nursing to cook for others in the family; (9) see that those who wait on the patient in any way wash their hands and

dip them in an antiseptic solution (a tablespoonful of carbolic acid to a pint of water); you must keep this out of the reach of children; (10) eat nothing that has been in the room with the sick; (11) boil every spoon, cup, glass, etc., used by the patient before they are handled or used by any one; (12) properly disinfect the bowel and kidney movements as follows: (a) by placing unslacked lime, the size of an egg in each half pint of discharge and then adding a pint of very hot water. Slacked or air-slacked lime is of no value. (b) Or by sprinkling about a tablespoonful of chloride of lime, sometimes called "bleaching powder" or "laundry bleach," over each pint of discharge and adding a pint of boiling water.

For larger amounts of discharge, a proportionate increase in the above substances would be used. After adding either of these substances, including the water, thoroughly mix the discharge with the solution and allow it to stand two hours before burying or emptying it into a sewer.

# SYPHILIS AND INFANT DEATHS

By Millard Knowlton, M.D., C.P.H.,

Regional Consultant, United States Public Health Service, Director Bureau of Venereal Diseases, North Carolina State Board of Health

When babies that are born alive die before reaching the age of one year their deaths are classed as infant deaths. The number of such deaths for each one thousand living births is spoken of as the infant mortality rate. When babies are born dead such events are recorded as stillbirths and not as births and deaths. Stillbirths are not included in infant mortality. Miscarriages that occur too early to be classed as stillbirths are not recorded at all. While this article is concerned primarily with infant deaths under one year of age, mention will also be made as occasion requires of stillbirths and miscarriages.

By reference to the accompanying chart (fig. 1) it will be noted that approximately 48 per cent of all deaths under one year of age in the registration area for 1919 occurred during the first month of life. In 1916 about 46 per cent of all such deaths occurred during the first month. At this early period death is due chiefly to prenatal causes. As progress is made in controlling preventable causes of infant death, such as gastro-intestinal diseases, it is to be expected that the percentage of such deaths due to prenatal causes will show an increase. Such an increase in percentage will serve to focus attention upon the problem of preventing death from prenatal causes.

In this connection it is instructive to group all deaths under one year in a few simple groups (fig. 2) as to cause. If this be done with such deaths in the registration area for 1919 and the result expressed as a percentage of the whole number of infant deaths, we have the following;

43 per cent from natal and prenatal causes

20 per cent from gastro-intestinal diseases

15 per cent from respiratory diseases

10 per cent from epidemic diseases

12 per cent from all other causes. Thus it appears that natal and prenatal causes are responsible for more than twice as many deaths under one year as any other cause group. This point is shown graphically in the accompanying chart. Natal and prenatal causes include syphilis, congenital malformations, premature birth, congenital debility and injuries at birth. Syphilis is given as a cause of death in comparatively few instances. It is known, however, that syphilis is an important factor in premature birth and congenital debility which are recorded as one of the chief causes of death under one year of age. Our knowledge concerning the exact number of such deaths for which syphilis is responsible is far from complete. Statistical data bearing on this subject are fragmentary and have often been compiled by a study of special groups that may not at all be representative of the general population. For this reason it is very difficult to reach general conclusions that are justified by the information available.

Dr. P. C. Jeans of St. Louis has made a careful study of the problem and gives us a few conclusions to which his studies have led him. For example, he thinks that about 10 per cent of all marriages involve a syphilitic individual and that about 75 per cent of the offspring from such families are infected. Dr. Jeans is also of the opinion that in syphilitic families the waste of life due to stillbirth and miscarriage is about three times the waste in non-syphilitic families, and that the infant mortality rate among the babies born alive is

TT 375

## Deaths Under One Year of Age by Monthly Age Groups

U.S. Registration Area, 1919

Total — 161,621

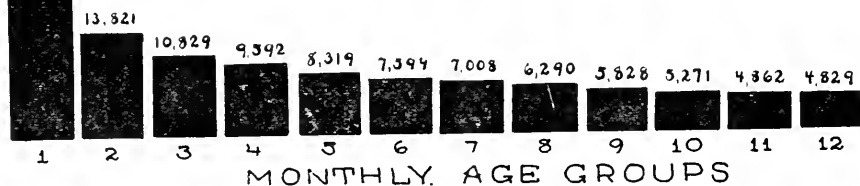


FIG. 1

about twice as great in syphilitic as in non-syphilitic families.

In concluding his statistical data, Dr. Jeans estimates that about five per cent of our infant population are syphilitic, and says that about  $3\frac{1}{2}$  per cent of all infant deaths in St. Louis are ascribed to this disease. While these figures may not hold for all sections of the country the fact that they are given seriously for one of our large cities should be in itself most impressive. It is quite possible if not probable that similar figures from certain groups of our population would be even higher.

Numerous other writers have furnished fragmentary statistical data bearing on this subject. Owing to certain differences in various groups studied, figures given by different authorities often vary within wide limits. For example, some authors think that syphilis is responsible for a very large part of epilepsy and idiocy, while others think that syphilis plays a relatively unimportant role in the causation of these conditions.

On the whole the view seems warranted that syphilis is a greater menace to our infant life than is scarlet fever, diphtheria, influenza or tubercular meningitis. In fact, Dr. William Osler, the famous American physician who spent the last few years of his life in England, would go much further and say that syphilis is a more common disease than tuberculosis, that it is responsible in his opinion for from one-sixth to one-fifth of the infant deaths in England and that it is by far the most common cause of death during the first month of life.

Dr. Osler also says that "Syphilis is perhaps the most common cause of abortions." He might have added that it is likewise the most common cause of stillbirth, causing as it does according to the most reliable figures available from one-fourth to one-third of the stillbirths in some of our larger cities.

Let me repeat again that not too much reliance is to be placed upon the general application of any figures given in connection with the preval-

# Deaths Under One Year of Age Grouped by Causes

U.S. Registration Area 1919

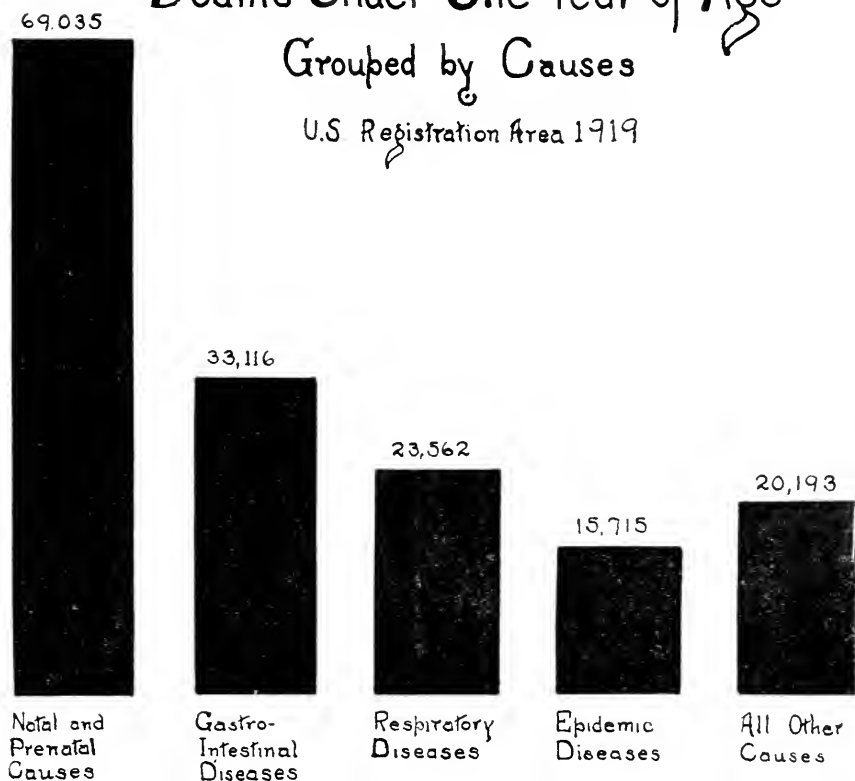


FIG. 2

ence of syphilis or the havoc wrought by its ravages. A figure indicating the prevalence of syphilis among one group of people may not be at all applicable to another group, and on the whole the data are so fragmentary that general conclusions with respect to prevalence of syphilis and the damage it is doing are little more than shrewd guesses based on what information is available.

We may be sure, however, that syphilis is an important cause of infant death as well as of miscarriage and stillbirth. We may be sure also that the essential factors in preventing syphilis among children are the discovery and proper treatment of adult carriers of the disease. Of course it is important to treat children who are infected, but since it is the infected adult and not the infected

child who spreads syphilis, it is especially important that the infected adult be treated in order to prevent further spread of the disease.

Treatment is a more important factor in the prevention of syphilis than in the prevention of most other communicable diseases. The reason for this is apparent when it is considered that untreated cases of syphilis are thought to remain contagious or communicable for a period of four or five years while prompt treatment when the first stage of the disease appears will cause all germs of syphilis to disappear from the lesions within a few hours and thus remove the danger of transmitting the infection to others.

It must not be thought, however, that the patient is cured when the germs have disappeared from the

lesions and the lesions have healed. Experience has shown that even with our modern method of treatment it is necessary to keep a syphilitic patient under treatment for a long period of time after all signs and symptoms of the disease have disappeared in order to guard against recurrence. Treatment is usually given in "courses" alternating with periods of rest. A "course" of treatment consists of several doses of medicine given at regular intervals followed by a period of rest and later by another course of treatment. It is not possible for patients suffering from syphilis to treat themselves. One of the drugs necessary in the treatment of syphilis must be injected directly into a vein. Only a skilled physician can administer a drug in this way.

In order that all infected persons may receive proper treatment it is necessary that such persons realize the necessity for treatment both for their own sake and for the sake of the public. While a few cases may be discovered by Health Officials and placed under treatment, the great majority must seek medical advice of their own accord if they are to receive proper treatment. It is important, therefore, that an educational campaign be conducted by the health authorities with a view to inducing all infected persons to seek treatment at the very earliest possible moment. The public must be told the why and wherefore of the necessity of seeking treatment if full cooperation is to be expected. They must know certain things in regard to medical aspects of the syphilis problem, and must learn to evaluate the various activities directed toward prevention. Some of the things that should be recognized and appreciated by the public may be enumerated categorically as follows:

1. It is important that adequate medical service be available in all parts of the state. By this I mean that there should be enough medical practitioners with special knowledge of the diagnosis and treatment of syphilis so distributed over the state as to be accessible to all infected persons. As a matter of public

economy, it is preferable where possible that infected persons be treated as private patients who pay for their own treatment. When necessary to protect the public health, infectious patients should be treated at public expense. In North Carolina the responsibility for such treatment is placed by law upon the County.

2. When one member of a family is found to be syphilitic it is desirable to have other members of the family examined for possible syphilis. This should apply to both old and recent infections where there has been a possible chance for transmission of the disease either by contact or inheritance. It should be remembered that syphilis is syphilis when it occurs as paresis, locomotor ataxia, syphilis of the blood vessels, or other late manifestation of the disease, just the same as if the infection were recently acquired. Syphilis may be transmitted to other members of the family as an inheritance or by accident. It is for this reason that other members of the family of such a patient should be examined for evidences of syphilis.

3. So much emphasis has been placed on the Wassermann test that the public is apt to acquire a distorted view of its value. It should be understood that the meaning of the Wassermann test depends quite largely upon the technique and care used by the laboratory where it is performed. Where the test is accurately adjusted to conservative technique and performed with great precision and care as in the State Laboratory of Hygiene, a positive Wassermann nearly always means syphilis. In laboratories where less conservative technique is employed the meaning of a positive Wassermann is less definite. In any case a negative Wassermann does not exclude syphilis. A certain number of active cases of syphilis in the third or tertiary stage will give negative Wassermanns. This is especially true if the cases have had partial anti-syphilitic treatment and have relapsed because the treatment was not completed. The Wassermann test is valuable as an aid to diagnosis and also as a guide to treatment but the

interpretation of its meaning should not be attempted by a person other than a physician. It is often difficult enough for a physician to estimate accurately the worth of a Wassermann test. Certainly, such estimates cannot be made by a person without special knowledge of the subject.

4. It has been pointed out that syphilis has been the cause of miscarriage, stillbirth or of early death from congenital debility or premature birth. These conditions are so frequently due to syphilis that it is believed advisable to examine the parents for syphilis and test their blood by the Wassermann method in all such cases. As pointed out in the preceding paragraph, a few cases of active syphilis will be missed by the Wassermann test but carrying out the procedure here recommended will result in discovering a syphilitic cause in a large number of cases where it exists and thus permit giving specific treatment.

5. It is so important to protect the unborn child from syphilis that if one accepts at its face value the statement that 10 per cent of married women are syphilitic it might be worth while to consider the feasibility of a routine Wassermann test for all pregnant women. Certainly wherever such a woman has a history of previous miscarriage or there is other reason for suspecting syphilis, both a clinical examination and a Wassermann test should be made. In all cases where syphilis is discovered in a pregnant woman vigorous treatment should be given. The best way to treat a syphilitic child is to treat the mother before the child is born.

6. As a general measure of protection for future children, all cases of venereal sore should be given very careful attention. It is now possible by means of the "dark field" method of examination to find the germs of syphilis even in the first sore of the disease. Thus it is possible by this method to make the diagnosis of syphilis with absolute certainty before Wassermann reaction becomes positive, and treatment begun at this early stage is much better for both patient and the public. For the

patient it insures speedy recovery with less prolonged treatment than would otherwise be required. For the public it affords a safeguard by cutting short the period during which the patient is capable of transmitting infection. It is for these reasons that "dark field" examinations should be made on all venereal sores in order to distinguish chancre from chancroid. Chancre is the first sore of syphilis while chancroid is merely a local ulcer. No medicine that might kill the germs should be used on any suspicious sore before making such an examination in search of the germs. If the first examination is negative, repeated examinations should be made before deciding that a sore is chancroid.

7. Let me emphasize again the necessity for thorough treatment of syphilis. When a patient begins to feel better there is a disposition to become careless about returning for treatment. This is a dangerous thing to do because a case of syphilis is usually much more difficult to treat after relapse than at first. Erlich, the man who discovered arsphenamine (the new name for salvarsan or "606"), once hoped that a single dose of the drug would destroy all germs of syphilis in the patient's body and thus effect a cure. We now know that such is not the case. Not only does it require repeated doses but it requires repeated courses of doses to be sure of a cure of syphilis. If treatment is begun in a very early stage of the disease, a speedier cure may be expected than if treatment is begun later. When treatment is not begun until the rash appears on the body the courses of treatment with alternating periods of rest must be kept up for a period of two or three years in order to insure against relapse. Even then it is important that the patient remain under observation of the physician for a period of years, reporting at stated intervals for examinations and tests. Owing to the importance of early treatment and of thorough treatment for syphilis, it is desired to especially emphasize these two points to the end that people who become infected may seek treat-

ment early and may remain under treatment for a sufficient period of time to insure permanent results.

In conclusion it has been shown that syphilis is an important though not accurately measured factor in the waste of infant life, especially before birth and during the first month after birth. This king among diseases that ranks with tuberculosis as a cause of death is unique in the destructive force it carries to the next generation with such havoc to unborn and new-born children. If the germ plasm of the race is to be protected against its ravages, it is necessary to direct attention toward the prevention of syphilis. The prevention of the unnecessary waste of infant life caused by syphilis is possible only by

limiting the prevalence of the disease itself. Since syphilis is spread chiefly by adults it follows that the prevention of syphilis among infants and children requires that syphilis be prevented among adults. Attention must be given to the adult carrier. The essential elements in the program of prevention are the early diagnosis and the vigorous treatment of existing cases extended for a sufficient length of time to insure against relapse. In order that unfortunate victims of the disease may be led to seek early treatment, and to continue treatment sufficiently long there must be a wide-spread diffusion of information concerning the necessity for such early and prolonged treatment for the protection of both the victim and his offspring.

## SAVING THE MOST WONDERFUL MACHINE

By Dr. L. B. McBrayer

The value of human life, as taken from the economy tables of Professor Irving Fisher, is fixed at \$4,000 and this figure is recognized as the standard in the United States. And yet, mechanically speaking, the human organism is by far the most wonderful piece of machinery ever made. It is the strongest, the most complex, the most obedient and long suffering of all machines. Besides it is equipped with a mind and a heart, and has an almost inexhaustible amount of reserve power. Where on the face of the earth can you buy a machine so wonderfully made for \$4,000?

All credit to the automobile. It will stand a lot of abuse. Day after day, night after night, for a certain length of time, it pelts along, battered by rocks and other cars, pumping up long, steep grades, the inside almost torn out by careless gear shifting, no oil in the engine, no grease in the transmission, exposed to mud, rain, heat and cold, generally manhandled, sometimes womanhandled, until one wonders that it runs at all. But it

does run and it is a never ending marvel to us how well it does it. And yet we meet human machines every day that can give a handicap and beat the automobile a mile.

Can we run on one cylinder, and sometimes just half of one cylinder? Yes, and win the race oftentimes. Remember Edward Livingston Trudeau, who for forty years chugged along with extensive tuberculosis of both lungs; laid up in the shop for repair often, with nothing much left except the will to serve humanity; and yet he gave to this country the treatment that is saving thousands of lives each year from the ravages of the "Great White Plague."

And do you know that the most beloved of our star baseball players, the man whose name was on the tongue of every baseball fan a few years ago, Christy Mathewson, is fighting a winning fight on the spot founded by Trudeau?

There is Robert Louis Stevenson, who seems to have been born with the croup and whooping cough, and



who, before he was seven, was a veteran not only of measles and all such things, but also of gastric fever, chills, pneumonia and bronchitis—all of which combined spell tuberculosis. Then read his "Treasure Island" throbbing with vitality; his virile "Master of Ballantrae"; and those sprightly, brilliant essays full of life and the out-of-doors and hope. Recall, if you please, that some of the best of Stevenson's work was dictated from bed, where he lay so exhausted that he must resort to signs to fill in the gasps. Good for Stevenson.

We don't have to go out of the good old North State to find examples like these, either. Probably they are not so well known nationally, but all of us can name scores. And doesn't it make a fellow feel ashamed of himself—or ought to—when he gets up with a headache or faces a mortgage,

or his mother-in-law, and exclaims dolefully: "I'm all in! Can't do a thing! Life is one confounded thing after another. Boo-hoo, boo-hoo." Say "quit" because you have tuberculosis? I should say not. Just send the old engine to the shop, put a good mechanic to work on the job, burn the right kind of fuel and don't speed for a while and you will come out and be able to do sixty seconds each minute without heating.

The repair shop for tuberculosis is the sanatorium. The good mechanic is the right physician. The rest is up to you.

As soon as you find your engine missing or overheating, even though it be just a little, have the good mechanic look it over. It will mean a shorter stay in the shop and your bill for repair will be much more satisfactory to you.

## SOME POINTS ABOUT CHICKEN-POX

By J. S. Mitchener, M.D.

Chickenpox, also called varicella, is a highly contagious but usually mild disease, accompanied with an eruption, and more or less fever. The eruption in the early stage is very much like small blisters. Blisters just forming, well formed and those that are drying may be seen on the body at the same time, two or three days after onset. It is found most commonly in children between one and seven years.

What you need to know about chickenpox is that it is frequently confused with smallpox. Mild cases of smallpox can be easily mistaken for chickenpox and the reverse is also true. This may cause severe epidemics of smallpox. As chickenpox rarely occurs in grown people, when an adult has any eruption like chickenpox, the disease should be considered smallpox, and most likely it is, unless the person has been successfully vaccinated against smallpox recently.

The following nine points should be remembered when you think of chickenpox:

- (1) Occurs mostly between 1 and 7 years of age.
- (2) May be confused with smallpox.
- (3) Eruption may be first thing noticed.
- (4) Eruption usually appears on back, chest and face.
- (5) Spreads over body.
- (6) All stages of the eruption can be seen on the body at one time.
- (7) Child usually not sick much.
- (8) Dangerous to scratch the blisters.
- (9) A successful vaccination against smallpox will protect you against the danger of being exposed to smallpox when it is thought to be chickenpox.

It is the part of wisdom to play safe against smallpox. BE VACCINATED. A wolf often comes in lamb's clothes.

# AVOID THE GRIP

Of the  
**TYPHOID  
HAND**





# The Health Bulletin

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JULY, 1921

No. 7



## HAPPY HEALTH CRUSADERS

This happy group of Modern Health Crusaders are known as the Nutrition Class at Guilford College. All the children, except three, are drinking milk regularly, and none of them drink coffee or tea. Considerable improvement has been noted in their health since they began doing "health chores." Look at their bright, intelligent faces, and you will see that it pays dividends in better health to be a Modern Health Crusader.

These forty-two youngsters entered into the game of gaining and being healthier by drinking milk and performing health chores under the direction of the grade teacher, Miss Sheppard, and Miss Bessie Noles, instructor of domestic science at Guilford College, and the county nurse, Mrs. Dorothy Hayden.

The children were most enthusiastic about showing a gain each "weighing day," the first of each month, the progress of which was wonderful in the short length of time.

The seniors of the Domestic Department of the college are planning to inaugurate the Modern Health Crusade in all the grades next year, and to further supplement the health work by home visits both to the families of Crusaders and those of pre-school age.

The North Carolina Tuberculosis Association, Sanatorium, N. C., is distributing Crusade supplies in North Carolina, and will be glad to furnish samples to those interested.

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### FREE HEALTH LITERATURE

The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in.

WHOOPING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
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MALARIA

SMALLPOX  
ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES  
CATARRH

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### FOR EXPECTANT MOTHERS

Rose M. Ehrenfeld, R.N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend send name to the State Board of Health, and give approximate date of expected confinement.

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### THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for *The Bulletin* each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.

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Vol. XXXVI

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## MAY CARE FOR TUBERCULOUS

The counties of North Carolina now have ample authority for properly caring for the tuberculous in each county. A special act of the 1921 session of the General Assembly amended the existing law so that all counties are authorized to make appropriations from the general funds of the county. The amendment is contained in chapter 178, Public Laws of 1921, and the amending language is as follows:

*"Provided further, that the board of county commissioners of any county in the State may, out of the general funds of the county, provide for either the erection or maintenance in said county of a county tuberculosis hospital."*

Heretofore it has been necessary for a county to hold a special election for the purpose of issuing bonds or levying a special tax, or both, when it was desired to establish a county sanatorium for the care of those suffering with tuberculosis. Under the amended law the extent to which any county may make provisions for the care of the tuberculous is limited only by the amount of the general fund raised under the general tax levy of the county, and the desire of the county officials to so expend such funds.—*R. B. W.*

## IS YOUR BABY REGISTERED?

The Bureau of Vital Statistics of the State Board of Health has added a new feature to its most valuable and up-to-date methods. It is sending out a postal card to parents announcing that the birth of their child has been

registered with the bureau. If the name of the child is not registered the parents can fill in the name in blank space on the card and return card to the Bureau of Vital Statistics and the name will be put on the original certificate. If by some error, such as a mistake in reading the name, probably caused by bad penmanship, the parents can correct the error by writing plainly the correct name of child on card and returning same to the Bureau of Vital Statistics. This is a most important feature of birth registration. This card also carries an offer of a beautiful certificate of registration suitable for framing which costs the parent fifty cents. This barely covers the cost of the extra work for the bureau. These certificates are very artistic, beautifully executed in white and blue ribbon, State Seal, etc. This extra work is for a threefold purpose:

1. To stimulate the reporting of births and to make North Carolina one hundred per cent in reporting births and deaths.

2. To let parents positively know if their children's births are registered.

3. To get names of babies registered. The certificate without the name is of little value to the child.

Parents will receive these cards about ninety days after birth of child. There is not a home so poor or humble, in which a little stranger enters, who may later become President of these United States, or the queen of some man's home, but will be made richer if the services of the Bureau of Vital Statistics are used advantageously. A great many family trees are legendary. Start yours right by using the State's registration service.—*F. M. R.*

### "A GREAT WHITE WAY"

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It will probably be of interest to the people of North Carolina to know that during the month of May, 1921, there were 243 deaths from tuberculosis, 102 white, 139 colored, and 2 Indians. These deaths were scattered all over the State. This is about the monthly average of deaths from tuberculosis. If this number of people were dying from some disease that might be termed spectacular, viz.: some disease with an eruption like smallpox and of short duration of sickness, why the people would lay down all the activities and the one thought and effort would be to stop the ravages of this disease. No amount of money would be too much and no labor too great to stamp out this disease. But we have grown familiar with this disease and people linger so long and get so helpless that we begin to think it was a merciful Providence that carried them out of their weary lives to the great beyond. We lose sight of the fact that tuberculosis is preventable and curable under favorable circumstances. Every county having a population of 25,000 should have a tuberculosis sanatorium. Not only to take care of the active cases, but to be used as a center of knowledge to teach prevention of tuberculosis. The prevention and cure of tuberculosis depends almost entirely in finding cases early, then teaching the patient how to care for himself.

One small State Sanatorium is only a miniature oasis in the Sahara of Tuberculosis.

One small State Sanatorium in an approximately yearly tubercular population of 30,000 cases and 3,000 deaths!

One small State Sanatorium manfully, sympathetically, and scientifically trying to do the work that would require 100 times as many people and fifty other institutions of equal size to do!

If the people in North Carolina who have open cases of tuberculosis held hands outstretched they would extend over a distance of thirty miles. Multiply this by ten years and you have a

great white way extending 300 miles in the distance, with nothing to tell us that this great army of tuberculars have passed along but rows of white crosses telling the story of the damage wrought and the story of our inertia and do-nothingness. Yes, in 10 years over 30,000 crosses to the memory of those who died of tuberculosis, standing as silent sentinels of our lack of interest, lest we forget. It seems that the tuberculosis question means more to North Carolina than any other question of today, good roads, or schools, in fact all material progress, when lives are at stake. We have actually gone to sleep at the switch in regard to tuberculosis.

In 1917 there were 3,402 deaths from tuberculosis. In 1920 there were 2,908 deaths from tuberculosis, a reduction of 494. The credit for this reduction should be given largely to the State Sanatorium. It shows what one small institution can do. Multiply this institution fifty times and see what a reduction in deaths we will have. The economic loss to North Carolina yearly by deaths from tuberculosis is over twelve million dollars. If we add to this the loss of the services of those sick, the amount would be unbelievable.—*F. M. R.*

### THE WRONG ATTITUDE

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Two years ago a mother and father carried their children to the health officer for the treatment preventing typhoid fever. When the first dose was given to them, the health officer approached the parents, but they decided to wait a week to begin treatment. The second time the children came, they stated that their parents were not coming, because they did not think they would have typhoid, since they were over fifty years old.

Today the mother has typhoid. This fact suggests that our people should be better informed about the ages at which people have the disease. So many have been misinformed about this. During the years 1914, 1915, 1916, and 1917 two hundred and sixty-six died of typhoid

who were above fifty, and two hundred and sixty-two who were younger than five.

Five are said to have died from this disease above the age of eighty-five, and twenty-eight under one year. Now you see who should take the treatment preventing typhoid fever.

Another thought comes from this case of typhoid fever. Formerly this family supplied the nearby town with milk, and had the case occurred then there would have been an excellent opportunity for a milk-borne epidemic to have resulted. People who supply milk to the public should always take every precaution to protect themselves against this disease. They should also be very cautious about securing servants who have had typhoid, as they may be carriers of the germs.

If the readers will but learn that typhoid respects no age and uses every way possible to take advantage of you, possibly the person referred to above will not have had the disease in vain, as the report of her case suggested this article.—*J. S. M.*

### UNUSUAL CAUSES OF DEATH

In the report of deaths and their causes from the North Carolina Bureau of Vital Statistics for 1920 there are some outstanding and very interesting facts, that the citizens of the State must take cognizance of and decide what they are going to do about them, for something must be done.

The first thing that invites our attention is the number of deaths from burns. There were in 1920, 309 deaths from burns; in 1919 there were 291—a difference of 18 in favor of 1919. These deaths were caused by carelessness on the part of some one, and could have been prevented. Every open fire, and stove for that matter, should be protected by wire screens. These screens can be bought or made at home. These screens prevent sparks from flying out

into the room and prevent clothes and children from getting in the fire.

The next item that invites our attention is the number of deaths from automobile accidents. In 1919 there were 106 deaths from automobiles; in 1920 there were 161 deaths—an increase of 55 deaths. While the number of automobiles have increased to some extent, still the increase in deaths shows that automobile, good roads, and reckless driving has increased faster than traffic officers could take care of the traffic. The law has been too lenient on speeders and careless drivers. The lid must be tightened down. Every driver must have individual license to drive, and a strict revocation of license must follow infractions of traffic laws.

The burden is always on the driver, as against the pedestrian. There may be contributory negligence on the part of the pedestrian, but the burden is on the driver of the powerful and potential death-dealing machine. There is no doubt that 90 per cent of the deaths from automobile accidents could have been prevented if proper care had been exercised by the driver of the car. While people may kick on traffic laws being enforced and joke about breaking the law and getting away with it, still the duty of the State to the people as a whole is clear and well defined. The present laws must be strictly enforced, and other needful laws enacted.

The next item that claims special attention is 258 homicides in North Carolina in 1920, and seven legal executions. In 1919 there were 234 homicides, 1920 showing an increase of 24 in the number of deaths due to violence at the hands of others. The cause and prevention of homicide enters into the very warp and woof of the fabric of the home. Here the law of prevention lies deepest. "Train up a child in the way he shall go and when he is old he will not depart from it." The prevention of murders by paranoiacs lies still deeper, and is another story.—*F. M. R.*

**Typhoid vaccine will confer immunity from typhoid fever. Have you taken this easy insurance against a long illness or probable death from this preventable disease?**

## LITTLE MOTHERS' LEAGUE

BY MISS CLARA ROSS, R.N.

Read at Meeting N. C. State Nurses' Association, Wrightsville, June 15, 1921

The North Carolina Little Mothers' League diploma stands for the completion of a course in Infant Hygiene as definitely prescribed as the elementary school course. The pin is a badge given to aids to the Bureau of Infant Hygiene, and shows that the girls have met the requirements of this course and are prepared to do their work.

The primary object of this organization is to reduce sickness and death among babies; and if the number of small coffins sold in our counties is to be materially influenced by it, we must teach the text.

The excellent outline adopted by our director will keep us on the main thoroughfares and bids for all the originality and local color we can add to it.

Shall we correlate other phases of hygienic teaching? Sex and personal hygiene lessons are often the responsibility of the public health nurse, and the opportunity presents itself here. Again we may lose sight of our primary object. Other opportunities can be arranged for such instruction without undesirable suggestions which might be brought out if given in connection with infant hygiene.

(a) Our training schools for nurses have settled the short and special course very satisfactorily, and we can safely follow the same plan in giving L. M. L. pins and diplomas. Junior high school students, although not able to give the required time to these subjects, but who have already had some of the fundamental work of the league's course in their hygiene and sanitation, should be given a few special lessons as a part of their home economics course. Where the group of girls is not too large, three or four grades can be given these lessons once in the same number of years. (1) These girls should be given a lecture explaining birth and death registration; some of

the facts from their local vital statistics concerning babies, causes of their deaths, at least those they could understand and influence; and they should be told about the work of their county and State boards of health. Other lessons and demonstrations on the following subjects should be given: (2) handling of milk; (3) feeding the baby; (4) milk modification; (5) bathing and clothing the baby; (6) danger signals and first care of the sick baby, and causes of sickness. Credit for these lessons can be given on the school report.

(b) It is sometimes advisable to scatter our efforts, too, in giving a single lesson to a large number of groups where there is special need for a certain type of instruction. In my county where a large part of the population is colored, a study of vital statistics shows that many of their babies die during the summer months. These babies were cared for by the children while their parents were in the field. One lesson was planned to help them and was given in thirty-seven schools to mixed groups of boys and girls from the first to seventh grades. They were intensely interested in birth and death certificates, and in the big books kept locked in the safe in the courthouse with their babies' names in them. They were also told how many babies died in 1914, and how many less in 1920; that we were learning to care for our babies better. They were then given the lesson in caring for the baby in summer. Simple elementary principles were given as briefly and plainly as possible with a knowledge of their home conditions, racial superstitions, what they knew and needed to know, in mind. They were left with a feeling that we were depending upon them next summer, and that they would remember. This pseudo-L. M. L. work did not warrant the distribution of pins and diplomas



to nearly 2,000 children reached, but I feel sure was a good piece of infant welfare work.

After all, the reason public health nurses have been called to do this teaching is not because we are trained teachers, but because we have access to the homes and know what the children should be taught to meet the needs of their environment. However, we should learn all we can about methods and procedures in teaching if we are to measure up as instructors.

Success or failure in L. M. L.'s does not depend upon equipment. We can improvise and find a wealth of material in any neighborhood; a live baby makes an excellent subject for a bathing lesson, though he may scream lustily and drown the nurse's voice as the demonstration proceeds. A cow is occasionally grazing near enough the schoolhouse to be used in giving a lesson on the care of the milk in the home with the added milking and cooling process so important for the "knee" baby. Until we no longer need the lesson on insanitary privies and the part of the stable in raising flies we will be able to find illustrations for one lesson. It is well for us to be familiar with the flies' eggs and maggots to be able to point them out.

A complete equipment as listed in our outline, however, will save the time and energy of the nurse. If the materials for each lesson can be packed and listed a further saving can be made for visits to babies near the meeting place. "Mary Jane Edgecombe," my four-months-old chase doll, is the most popular baby in the county. Her hands and feet are warm from caresses and her lips are dulled from kisses, in spite of frequent admonitions not to kiss her in the mouth. She is something very real between the doll of yesterday and the baby of the future.

A milk modification outfit which can be carried in the kettle used for boiling with a four-inch pan that fits over it, and that can be used in the demonstration to put the boiled utensils in as the work proceeds, should be of the simplest kind. Complicated and expensive utensils should not be chosen.

A complete layette is a valuable accessory. A Red Cross Committee from Atlanta sent me a very lovely one, which I had wanted and needed badly. When I talked of it to my committee I suddenly realized that I had deprived them of a privilege in not asking for it or at least suggesting it. The people in our district get an understanding of our work when they have a part in it.

All help given the officers in the club's activities should be given outside of meetings. We should not join the "Cripple's Union" by doing too much and preventing the development of good club membership. They will call on us for our lesson and we need to keep our mind on the objective to be reached.

Very attractive notebooks can be made and bound with notes from each lesson, embellished with cut-out pictures from magazines, "Infant Care," "The Cornerstone," a "Birth Certificate," "Standards of Weight and Height," and "Diet Sheets" can be preserved in attractive binder that can be made or purchased for a few cents.

Attractive posters and calendars can be made by utilizing advertising calendars and poster backs and the many beautiful baby pictures in the magazines. These can be used if we wish to have the graduates of the class help us by giving a meeting to their mothers and others at which a L. M. L. playlet is presented, or at which all the babies in the community are weighed and measured by the nurse, health officer, and aids.

A very attractive playlet was published in the Public Health Nurse in 1918.

One of my L. M. L.'s presented this play with very gratifying results. Mrs. Youngmother bathed her baby and talked with her neighbors, bringing out many points studied and reviewing them. One of the members of the class impersonated the public health nurse and gave a demonstration of milk modification that was very creditable, both as a lesson and an impersonation. Fifty people attended.

The interest of the girl can be secured and held if only the lessons are

filled with vital subject-matter and can be made to touch their own lives.

Just a word about results. If we can organize and educate the girls in a few townships each year we will soon have a chain of junior workers over our county through whom we can find those who need our individual help. Our last year's Little Mothers' League can help us with our child welfare days this year. In fact, these girls will be

real aids to the county nurses and the Bureau of Infant Hygiene, in a part of their community program. Then, too, they can help more intelligently with the babies in their homes. Yes, sometimes we even look far enough in the future to know that they will be better prepared for motherhood while we watch for a decrease in our infant death rate in their district now.

## INTESTINAL WORMS

BY ALBERT SMEDES ROOT, M.D.

Intestinal worms are not as common as people generally suppose. There are two general classes, tape worms and round worms, and there are several varieties of each of these classes. Round worms are more often found than tape worms, but are more easily gotten rid of and do not affect the health as much as tape worms.

*Tape worms.* The tape worm eggs are swallowed in raw or partially cooked beef, pork, or sausage, or fish. They develop into the worm within the intestines, and these are from six to twenty feet in length and are made up of small fleshy links which, when fully grown, measure from one-half to three-quarters of an inch long and about half as wide.

*Symptoms.* The presence of the tape worm is often not suspected until the little fleshy links of the worm are seen in the child's bowel movement. Other than this, the symptoms of tape worm are bad breath, colicky pains, large appetite, and failure to gain or loss of weight, diarrhoea, paleness, restless sleep, and nervousness.

*Treatment.* Cook thoroughly beef and especially pork and sausage, to prevent the disease from occurring. To get rid of the worms, give a light supper of milk on the day before treatment. In the morning early give a dose of Epsom salts and no breakfast. After the salts has acted freely give a capsule of medicine two hours apart (three doses), and following the last one give

half an ounce of castor oil. Give no food but milk on the day of treatment. The following is the prescription for the capsules:

For.....

Rx:

Oleoresin of male fern drachm I  
Fit capsules No. III.

Sig.: one every 2 hours.

The treatment should be given under the direction of your physician. The dose for a child under four years of age should be smaller than this. Unless the head of the worm is expelled it will grow again, and after three months the links will again appear in the stools.

*Round worms.* The most common kind found resembles an earth worm and usually occurs in children between the third and tenth year. It is from five to ten inches long, light gray in color, with a pinkish tint. There may be few, or as many or more than a hundred present. They may enter the stomach and be vomited. The eggs are swallowed in unclean drinking water and unclean food.

*Symptoms.* It is usual that these worms are not suspected until one or more are passed in the stool. The symptoms are indefinite, consisting of colic, gas within the abdomen, loss of appetite, loose stools, disturbed sleep, paleness, and nervous symptoms, such as grinding the teeth at night. There may be low fever and headache. Very occasionally there may be convulsions.

*Treatment.* On the day before treatment give a laxative and only a glass of milk for supper. On the following morning at 7 a. m., 8 a. m., and 9 a. m. give the proper dose of oil of chenopodium, and at 10 a. m. give an ounce of castor oil. The oil of chenopodium is conveniently given by dropping it on a lump of sugar. The dose is one drop less than the age of the child in years up to ten years. A child, for instance, seven years of age would be given six drops at each dose.

*Thread worm.* Another kind of round worm is called the pin worm or thread worm. It resembles a short piece of thread and measures about one-third of an inch in length and tapers toward the tail. They inhabit the rectum chiefly and often can be seen by separating the buttocks. After the eggs are discharged from the body they may be carried by flies and deposited upon fruit, vegetables, and in drinking water.

*Symptoms.* The chief symptom is intense itching of the rectum, especially at night. The bowel movements contain mucus, bed wetting is frequent, there may be loss of weight. There is usually straining at stools.

*Treatment.* Sometimes it is difficult

to remove these worms and treatment must be carried on over a long period of time. Absolute cleanliness is necessary. After each bowel movement the parts should be bathed with boric acid solution. 1 teaspoonful of boric acid crystals to the pint of water. To prevent the intense itching, the buttocks should be separated at night and mercurial ointment applied. Every other day a high enema (by means of a number 22 French catheter) of boric acid solution of the strength mentioned should be given, and when this has been expelled a half pint of infusion of quassia injected through the catheter high up into the rectum and retained as long as possible. In case these measures do not suffice oil of chenopodium should be given in addition by mouth as described under the treatment for round worms.

In any case where intestinal worms are suspected an examination of the bowel movements under the microscope will probably show the eggs to be present. Samples of stools placed in open-mouth bottles and mailed to the State Laboratory of Hygiene, Raleigh, N. C., will be examined free of charge, and the result reported to the family physician.

## "THE MOST SUCCESSFUL FAILURE IN GREENSBORO"

By GERALD W. JOHNSON, IN GREENSBORO DAILY NEWS

"The most successful failure in Greensboro" might appropriately enough be the title to go over the story of the first year of the home on Glenwood Avenue established by the district nurse and relief committee for the care of tubercular cases. The home was established for two purposes—occasionally as a temporary refuge for curable cases, before arrangements can be completed to put them in the State Sanatorium; but mainly as a place where the hopelessly ill can die in peace, their last moments rendered as comfortable as medical and nursing skill are able to make them. It is in

this last function that the home has failed conspicuously. During the year no less than 20 patients, for whom the doctors had no hope, have been taken there to end their days. But after receiving proper food and attention, exactly four-fifths of the number have stoutly refused to die, and on the contrary have generally managed to get away under their own power.

It is a striking demonstration of the efficacy, in fighting tuberculosis, of scientific feeding and skilled nursing. It is as certain as anything human can be that every one of these 16 people would have died, had they been left

where they were found. But they weren't left, and they didn't die; and most, if not all, of them have been returned to the community as producers.

Statisticians estimate the value to the State of each human life as \$5,000. Let us assume that the reduction in efficiency in each of these lives, due to the weakening effect of the disease amount to 50 per cent. This is an enormously high estimate, but call it 50 per cent, even then the home has returned to the Greensboro community 16 lives, worth \$2,500 each. In short, by failing in its function as a deathbed, it has returned to the community in the first 12 months of its existence nearly 10 times its original cost. A pretty successful failure, that, is it not?

Tuberculosis is a preventable disease and, taken in the early stages, a curable one. Yet it costs the United States 200,000 lives every year. There are in Guilford County, according to the county health officer, 1,000 cases of this preventable malady.

Why not cure up those of the 1,000 that are curable, and prevent any more developing? It can be done. The province of Victoria, in Australia, is now demonstrating the practicability of it. But Guilford County up to date has never collected the necessary energy, never possessed the requisite vision, for such a program. Only here and there, in the cases of such organizations as the district nurse and relief committee, does one find more than the most perfunctory interest in the subject. And such organizations are invariably weak in numbers, and weaker in influence.

But the establishment of the home on Glenwood Avenue has had rather a remarkable effect. On the committee, originally designed as a charity, it threatens to become a sign and a portent, a standing accusation against the civilization of this community, a thing that will disturb the rest of all conscientious people until conditions are changed. For if out of 20 victims of tuberculosis already *considered in extremis*, 16 can be brought back to life and to a measure of health by such

simple means as clean quarters, careful nursing, and good food, how many of the 980 others in the county could be completely restored if Guilford were to do its duty and provide a sanatorium large enough to take care of them all? How many of its citizens does the county allow to die of sheer neglect every year?

These questions have risen in the minds of the members of the district nurse and relief committee, and they can't answer them. And the more they consider them the more they are troubled. Allowing valuable lives to be extinguished by negligence appeals to them, not as horrible cruelty alone, but also as gross and barbarous stupidity, unworthy of a county that prides herself on leading the State in all enlightened policies.

In the meantime, while wondering what strange paralysis has fallen upon the otherwise progressive county of Guilford in this particular regard, the committee struggles persistently, trying to tunnel Pike's Peak with its toothpick, as Mr. Dawes has it. It sells its Christmas seals, and raises money in other ways—the great county of Guilford, out of its \$133,000,000 of wealth, used to give \$25 a month to this cause, but the appropriation has recently been cut off—and manages to keep the Glenwood Avenue home running.

And when you look at the place, you no longer wonder that the 16 patients decided that it is a much better place to live in than to die in. It is a neat and attractive cottage, with a neat and attractive yard, in front, outlined by hedges composed, by a happy accident, of arbor vitae, "the tree of life." Everything about it suggests life, rather than death, and cheeriness is the keynote of the whole—not excluding Miss Mary Prather, the matron, who is without doubt the cheeriest thing on the place.

Within there is the scrupulous cleanliness of the hospital, but no smell of formaldehyde. In the interest of sanitation, furniture is there only in nominal quantities; and yet, somehow, the place escapes the impression of bare-

ness, so depressingly evident in many institutions for the ailing. Perhaps it is because the cottage was so evidently built originally to live in; but at any rate, while the cleanliness is striking, and the airiness hardly less so, the place is anything but bleak. It must be difficult for anybody to remain depressed for any great length of time in such surroundings.

However, one can no more go altogether by appearances here than elsewhere, and in spite of its smiling appearance the little house has known tragedy. After all, it wasn't a complete failure; some of those who have crept there to die never came out alive.

But even its tragedies lose some of their harshness and much of their bitterness through the influence of the little house. They never call names around here but occasionally they tell tales; and they are always tales worth listening to. Sad, yes, sometimes heart-rending, but nearly always illumined by the glow of human faithfulness, pity, and love.

For instance, they speak of a young couple who lived in Greensboro last year. They were humble folk, merely a workman and his wife. He was a good workman, marvelously skillful with almost any sort of tools—carpenter's kit, brickmason's trowels, machinist's drills and files, he knew how to handle them all. But even his cunning hands found a task beyond their skill when the mother of his three little children began to droop and languish. Unskilled to read the warning symptoms, neither of them realized that it was the White Plague that had laid its hand upon her until it had clutched her in a grip that could not be broken. Then that woman known officially as the district nurse, but long since raised to the nobility by the poor of this city under the title of Mother Peck, found out the state of the case, and had the young woman transferred to the little house on Glenwood Avenue.

She did not remain there long—just long enough to win the hearts of those around her by her sweet-spirited resignation, and her simple devotion to the boy-husband, who appeared every after-

noon as soon as the whistle blew at the factory where he worked. His trips to the little house were painfully few. She was not of the 16 fortunate ones, and though only 24 years old she could not recover; and soon there was no one to begin to look forward to his coming as soon as the whistle blew.

But for all that, he still drops in from time to time. His is a hard problem, with three motherless babies to care for and to earn a living for with his skillful hands; but all the same he finds time to come around to the little house and to do things for them there. Is there a pane of glass broken, or a bit of masonry crumbling, or a broken tread on the steps? Such things are what he looks for now, and a score of bits of repair work around the place testify to his gratitude. Gratitude for what? For not having allowed his wife to die like a wounded beast, friendless and alone.

It isn't much of a story from a technical standpoint—no plot, no climax, no dramatic action. Simply the story of a beautiful love defeated, of a true heart broken, of three tiny children started in the world under a terrific handicap.

Yet it is just such stories as that that keep the members of the district nurse and relief committee worried. They can't forget them. They grow upon them; assume in their minds a portentous and menacing shape. They terrify them.

Only a workman's wife—or is she a symbol? Dead at 24; dead of a preventable disease; dead of a disease that might have been cured if it had been taken in time. Only a workman's wife, dead in Guilford County. It is a great county, is Guilford. It has wealth amounting to \$133,000,000; it has schools and colleges in surprising numbers; it has two cities within its borders; it has splendid boulevards costing \$33,000 a mile, for roads, and is building more; it has a courthouse that is the wonder of the State—a graceful pile that glitters in the sunshine snowy white. Truly, a wonderful county.

Perhaps Guilford County could hardly be expected to take any particular heed

of one workman's wife, more or less. Among 80,000 people, what is one workman's wife? Guilford is so busy with so many things that it must necessarily overlook something once in a while. Years ago an effort was made to establish a county tuberculosis sanatorium, and one citizen, the late Caesar Cone, offered to pay out of his pocket \$30,000 of the expense. But the county felt itself unable to undertake the thing then, and Mr. Cone's offer was never accepted. If the sanatorium had been built, perhaps this workman's wife might have been saved. But what of that? The county needed a new courthouse, and not even wealthy Guilford has money for everything. So the courthouse was built and the sanatorium wasn't.

And the district nurse and relief committee bought the little house on Glenwood Avenue, and began taking them out there to die. It is something—ah, the young workman with the strong cunning hands will tell you that it is much. But even so, the women on the committee don't feel right about it. It keeps ringing in their ears: "Dead at

24; dead of a preventable disease; dead of a disease that afflicts 1,000 other citizens of Guilford, and that might be almost, if not entirely, stamped out if the county would furnish the money to fight it." And recalling that, the fine new courthouse, gleaming in the sunlight, graceful and white and spotless, seems to them less like a temple of justice than a huge cenotaph to all the workmen's wives who have died for lack of the care that could have been furnished with the money that that building cost.

So their hearts turn away from this snowy building that commemorates a spirit colder than snow, a civilization harsher to the afflicted poor than the savage winds that whirl forever around the poles; and they lavish their affection on the little house prepared for death, but that has smilingly proffered life to 16. And they even dare maintain that here, and not on the new court square, is the real pride of Guilford.

But they are only women, and haven't much business sense. So what could you expect?

## PELLAGRA

### CAN BE PREVENTED—CAN BE CURED

In North Carolina pellagra, a disease that is preventable and curable, has been levying a heavy death toll, but one that has been considerably lessened during the past two years. In 1917 the total deaths in the State from this cause amounted to 604; in 1918 the total was 634; in 1919 the total had dropped to 381; last year, 1920, a still further reduction was shown, the total being 297. For the first six months of 1921 the total number of deaths reported from this cause is thirteen less than for the first six months of 1920.

Dr. Joseph Goldberger, the recognized authority on pellagra in the United States, says: "Milk is the most important single food in balancing a diet and preventing or curing pellagra, and when lean meat, green vegetables, and fruits are for any cause not included in the diet, or only infrequently, or in very small quantities, it is most important that at least three glassfuls, one and one-half pints, and preferably more, of milk, sweet or buttermilk, be taken daily. This single addition to the customary diet will in practically all instances protect the individual from an attack of pellagra."

## VITAL STATISTICS FOR 1920

By DR. F. M. REGISTER

Caesar, for historical purposes, divided all Gaul into three parts.

For statistical purposes, and for better comparison, we have divided North Carolina into four sections, or sanitary divisions: twenty extreme eastern counties with a population of 301,961; twenty extreme western counties with a population of 335,153; thirty middle eastern counties with a population of 933,148; thirty middle western counties with a population of 988,861.

The tables covering each county in each of these four subdivisions are given on subsequent pages. Compare the number of deaths from any particular disease in your county with other counties in the same section having about the same population. Then compare with counties having about the same population in other sections of the State. Then compare your county and section with the State as a whole. By this means you can obtain a fairly accurate idea of the weak places in your county, if there are any, from the public health viewpoint.

Almost all the deaths tabulated here could have been prevented. You may say that we cannot prevent whooping-cough, but you are wrong. Whooping-cough can be prevented largely by the administration of fresh pertussis vaccine, and by keeping babies away from others who have the disease. The ma-

jority of deaths from whooping-cough occur in children under three years of age, babies in arms for the most part. Strict quarantine will prevent the spread of scarlet fever and measles. Look at the figures of how many deaths are caused each year by these two diseases, which affect for the most part children. Nearly all the deaths charged to these two diseases were those of little children. Diphtheria can be prevented absolutely by using toxin antitoxin. This is made and distributed by the State Laboratory of Hygiene at a cost of ten cents for sufficient to give three doses, the amount required to confer immunity. Diphtheria can be cured absolutely, provided antitoxin be administered in time. Antitoxin is made and distributed by the State Laboratory of Hygiene, and in any size dose costs only twenty-five cents. Careful watch over the feeding of the children will bring down the total of the deaths from other causes. The death rates for the particular diseases mentioned are being reduced each year, along with typhoid fever, tuberculosis, and other preventable and curable diseases. But the death rate is not dropping as swiftly as it might, and should. Mr. Citizen, find out the part you can play in this reduction of deaths from preventable causes, and then go to it.







Mecklenburg--	54,034 White--	629	112	19	23	38	2	1	1	7	6	1	2	36	25	61	39	2	1	2	14	1	1	3	37	8	1	3	5	7	1	1	31
	26,661 Colored	417	70	13	11	14	2	2	2	3	2	1	1	28	22	40	58	1	2	1	2	2	2	3	11	2	2	3	1	6	1	1	195
Montgomery--	11,222 White--	94	26	1	2	1	1	1	1	4	1	1	1	5	3	14	7	1	1	1	1	1	1	3	4	3	1	1	1	1	1	40	
	3,285 Colored	38	6	2	1	1	1	1	1	1	1	1	1	2	1	5	4	1	1	1	1	1	2	2	3	4	2	1	1	1	1	21	
Orange--	12,258 White--	132	24	8	9	8	1	2	2	1	1	1	1	5	3	17	11	1	1	1	3	3	4	4	4	1	1	1	1	1	1	68	
	5,637 Colored	84	14	1	1	11	1	1	1	1	1	1	1	4	3	9	11	1	1	1	2	2	2	3	3	3	1	1	1	1	1	41	
Person--	10,799 White--	118	25	6	5	5	2	1	2	1	1	1	1	9	10	6	11	1	1	1	5	4	1	1	5	1	2	2	2	2	2	52	
	8,174 Colored	121	19	8	4	4	1	1	1	4	1	1	1	12	9	45	13	7	1	1	5	4	1	1	15	1	2	2	2	2	2	174	
Randolph--	27,302 White--	309	56	13	15	15	2	5	4	1	1	1	1	12	9	45	13	7	1	1	2	2	2	2	2	2	1	1	1	1	1	153	
	3,554 Colored	58	8	3	1	5	10	1	1	1	1	1	1	8	2	24	5	1	1	1	1	1	1	1	4	4	3	1	1	1	1	20	
Richmond--	15,021 White--	161	28	11	12	7	4	1	1	2	2	2	1	4	9	14	10	3	1	1	1	1	1	3	1	1	1	1	1	1	1	82	
	10,546 Colored	161	36	9	10	7	4	1	1	2	2	2	1	8	2	24	5	1	1	1	1	1	1	3	1	1	1	1	1	1	1	87	
Rockingham--	33,491 White--	378	105	22	21	30	3	10	2	6	6	2	2	14	8	57	31	2	4	5	2	4	5	3	1	17	2	3	4	1	2	149	
	10,658 Colored	174	37	4	5	3	1	1	1	1	1	1	1	9	4	26	23	3	2	2	1	1	1	4	4	2	2	2	2	2	2	84	
Rowan--	34,827 White--	323	48	14	11	18	3	3	3	1	1	1	1	17	8	45	18	6	2	2	4	4	1	1	2	24	2	5	3	8	1	136	
	9,235 Colored	160	31	8	6	2	2	2	1	3	3	4	1	6	6	25	21	1	1	1	9	4	2	1	6	2	1	1	1	1	1	78	
Stanly--	23,867 White--	213	62	12	13	17	3	1	1	2	3	4	1	9	7	24	15	1	1	1	6	1	1	1	5	1	1	1	1	1	1	1	32
	3,562 Colored	56	11	4	3	1	8	1	1	1	1	1	3	5	4	13	13	1	1	1	6	6	1	1	5	1	1	1	1	1	1	74	
Stokes--	18,997 White--	138	22	3	1	1	1	1	1	1	1	1	1	11	23	26	20	5	1	1	5	1	1	1	1	1	1	1	1	1	1	14	
	2,278 Colored	30	4	1	1	1	1	1	1	3	3	1	1	3	1	5	1	1	1	1	2	2	1	1	3	11	2	1	1	1	2	161	
Surry--	30,082 White--	314	79	17	11	20	1	2	1	1	1	1	1	12	13	68	11	5	5	1	12	12	1	1	1	1	1	1	1	1	1	17	
	2,382 Colored	35	7	2	1	1	1	1	1	1	1	1	1	13	13	13	11	5	5	5	5	4	1	1	10	2	2	2	2	2	2	129	
Union--	27,359 White--	329	76	27	24	26	2	2	2	1	4	1	1	16	7	26	14	3	2	2	4	4	1	3	2	2	2	2	2	2	2	1	137
	8,670 Colored	141	35	7	8	7	1	1	1	1	2	1	1	10	3	47	16	3	2	2	5	5	1	1	9	1	1	1	1	1	1	1	149
Wilkes--	30,322 White--	278	67	8	7	16	1	8	1	6	5	1	1	10	3	47	16	3	2	2	5	5	1	1	9	1	1	1	1	1	1	2	137
	2,322 Colored	21	7	1	1	1	1	1	1	2	3	1	1	5	7	23	7	3	1	1	3	3	1	5	5	1	1	1	1	1	1	1	16
Yadkin--	15,289 White--	145	24	4	5	10	1	1	1	2	3	1	1	1	5	7	23	7	3	1	3	3	1	5	5	1	1	1	1	1	1	67	
	1,102 Colored	12	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	
Totals--	771,166 White--	8293	1750	410	401	574	54	62	17	88	95	19	2	1	303	277	1007	508	69	13	6	108	15	68	238	3	51	62	34	28	9	3931	
	217,695 Colored	3473	708	158	141	166	19	5	1	48	16	1	1	1	158	135	392	454	35	10	1	80	27	36	86	2	33	10	8	55	7	1547	



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NORTH CAROLINA STATE BOARD OF HEALTH—BUREAU OF VITAL STATISTICS YEARLY BULLETIN FOR 1920, OF PREVENTABLE DISEASES  
BY CITIES AND RACE—REGISTRATION CITIES

CITIES IN THE REGISTRATION AREA	Population	Race	Total		Total Deaths (Under 1 Year of Age)		Total Deaths (1 to 2 Years of Age)		Diarrhea and Enteritis (Under 2 Years)		Congenital Debility and Sclerema		Other Causes Peculiar to Early Infancy		Dysentery		Measles		Whooping-cough		Diphtheria and Croup		Scarlet Fever		Epidemic Cerebro- spinal Meningitis		Infantile Paralysis		Lobar Pneumonia		Broncho-pneumonia		Influenza		Tuberculosis (All Forms)		Typhoid Fever		Malaria		Smallpox		The Puerperal State		Syphilis		Gonorrhea		Pellagra		Cancer (All Forms)		Conflagration		Burns (Conflagration Excluded)		Automobile Accidents		Railroad and Street Car Accidents		Homicide by Firearms		Homicide by Other Means		Total Deaths from All Other Causes																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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# SCHOOL DAYS AGAIN

ARE THE CHILDREN READY?

*Shoes and Clothes Have Been Put In Order*

BUT

HAVE THE CHILDREN BEEN  
PREPARED AGAINST DISEASE?

*REMEMBER!*

*They Will Be Gathered Together in  
Great Numbers*

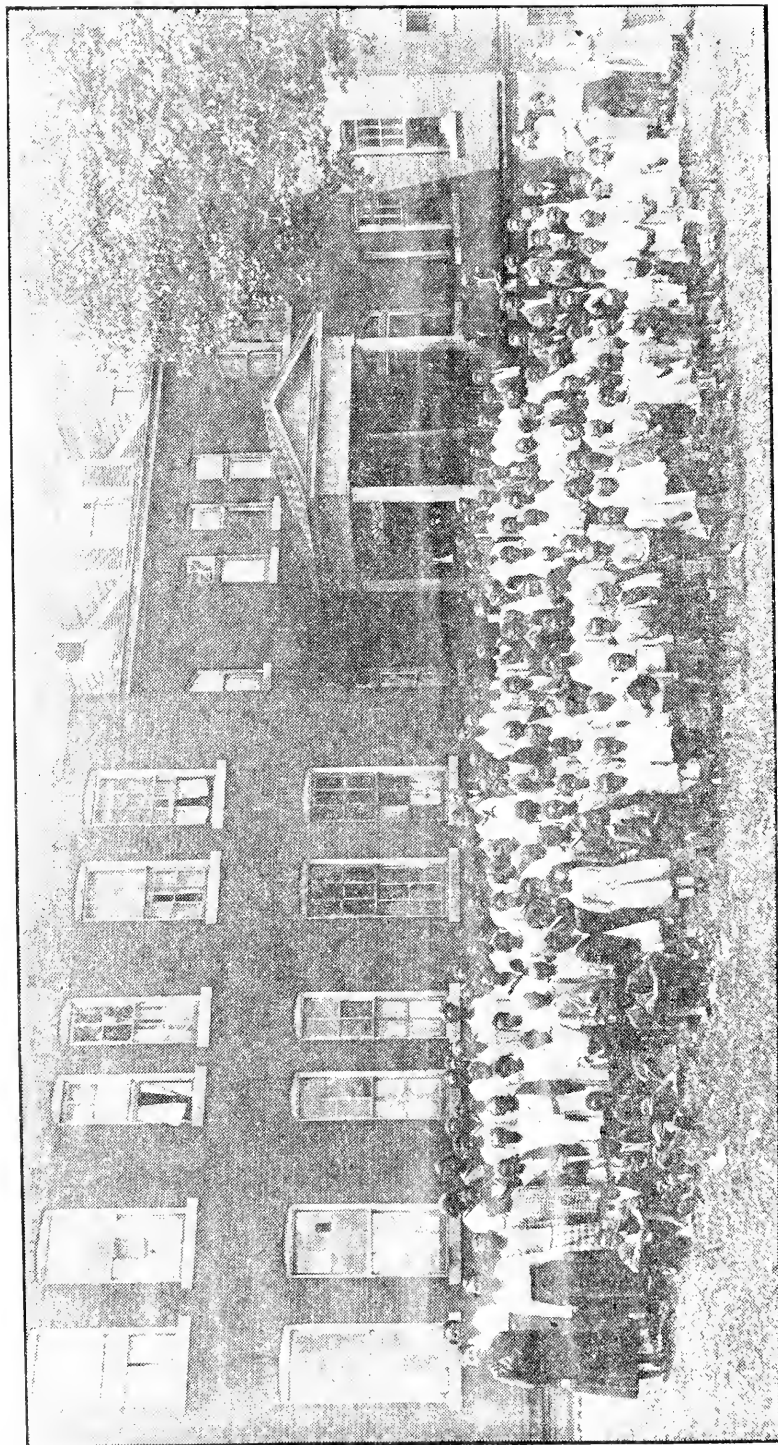
Are Their Teeth In Good Shape?

How About Their Tonsils and Adenoids?

Are Their Eyes Ready for the Strain?

Have Their Throats, Lungs, Hearts Been Examined?

Give The Kiddies a Square Deal



#### IMMUNIZED AGAINST TYPHOID

These are the teachers and children in the graded school for negroes at Salisbury. Every one has been given anti-typhoid vaccine, and thereby are protecting their lives and those of their neighbors, both white and black. The work of extending the anti-typhoid campaign among the negroes of Salisbury in such an excellent manner is to be largely credited to the efforts of Miss M. B. Lynch, City Red Cross Nurse of Salisbury.



# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

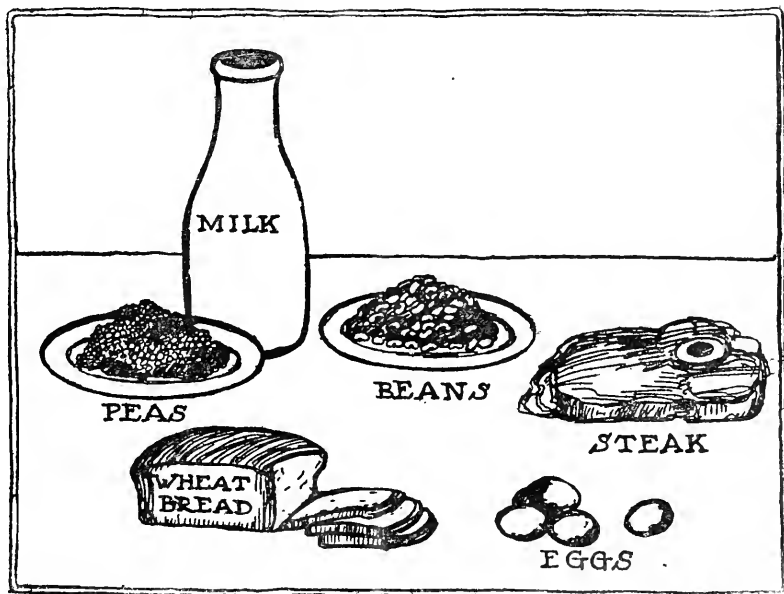
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## EAT THESE FOODS

and prevent pellagra. The most important of all is milk. Three glassfuls a day, a pint and a half, will make up the deficiency that may be caused by leaving out essential food elements in the diet. In North Carolina in four years the number of deaths from pellagra has been reduced more than one-half. The reduction can be continued, and pellagra removed as a cause of death in this State if proper attention is paid to diet. Peas, beans, eggs, lean meat, wheat bread and milk are all things that are within the reach of the average farm-

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K. E. MILLER, M.D., Director of County Health Work.

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## FREE PUBLIC HEALTH LITERATURE

The State Board of Health has a limited quantity of literature on health subjects for free distribution. If you are interested in one or more of the following subjects, or want same sent to a friend, write to the State Board of Health for free literature on that particular subject.

WHOOPIING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
CARE OF THE BABY  
FLY PLACARDS  
TYPHOID PLACARDS  
TUBERCULOSIS PLACARDS

CLEAN-UP PLACARDS  
SPITTING PLACARDS  
SANITARY PRIVIES  
WATER SUPPLIES  
EYES  
FLIES  
COLDS  
TEETH  
CANCER  
CATARRH

MALARIA  
SMALLPOX  
ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES

## LETTERS FOR MOTHERS

Rose M. Ehrenfeld, R. N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These have been approved by the medical profession. They give simple directions for care during pregnancy and confinement. They will be sent upon application to the State Board of Health. Give approximate date of expected confinement.

## THE HEALTH BULLETIN

The Health Bulletin will be sent each month without charge to any citizen of the State desiring it. If you have a friend or neighbor who will be interested in it, send their names. When you have finished with your copy, hand it to some one else so that its usefulness may be increased.

# THE Health Bulletin

PUBLISHED BY THE NORTH CAROLINA STATE BOARD OF HEALTH

Vol. XXXVI

AUGUST, 1921

No. 8

## THE TREATMENT OF PELLAGRA

There remains some difference of opinion as to the cause of pellagra, but there is now general agreement that the disease can be prevented and can be cured through the proper diet.

A general warning against a heavy increase of this disease throughout the Southern States has been issued by the United States Public Health Service. Reports to the North Carolina State Board of Health do not indicate that there is an increase of the disease in this State. At the same time there are a large number of useless deaths each year from this cause. The total number last year was 297. This number can and should be materially reduced.

Dr. Joseph Goldberger, Surgeon, United States Public Health Service, has devoted much time to the study of pellagra, and today is recognized as one of the leading authorities in the world on the subject. On other pages of this issue we are printing his discussion of pellagra, its nature, prevention and treatment. The article is commended to the careful attention of all our readers.—R. B. W.

## STATE AGENCIES THAT RANK WITH THE BEST

Dr. Hart, of the Russell Sage Foundation, tells Commissioner of Public Welfare Johnson that for North Carolina to fail in her public welfare work would be a national calamity, on account of the influence we have had on the development of such work in other states. It is a tremendous compliment, an amazing compliment. The most difficult and perplexing social service work in the world has admittedly been social service in the country; but North

Carolina, 79 per cent rural, if she cannot be said to have solved the problem, has attacked it with such vigor and such initial success as to inspire and encourage all the other rural states. No wonder Mrs. Johnson treasures Dr. Hart's remark and passes it on to the State.

Always bearing in mind the wide diversity that exists between the problems, as well as the resources, of rural and urban states, and the impossibility of comparing the agencies of a predominantly urban state with one predominantly rural, North Carolina may nevertheless take pride in having two agencies that are the best of their class in the Union. We refer to the State Board of Health and the Department of Public Welfare. It does not follow that North Carolinians are better served in those respects, for in such a state as New York, for example, the work done by various municipal boards quite overshadows that done by the State agencies. But down here we must necessarily depend upon the State, for we have no cities comparable with those of the urban states. And we may certainly take pride in the fact that, in our class, our agencies are unquestionably the best.

Furthermore, we have another department that is rapidly fighting its way to the front. That is the State Department of Education. It still has a long way to go before it can be classed as among the best in the Union, even among the rural states, first, because other states have been engaged in the development of public education for generations, whereas both public health and public welfare are comparatively recent developments of governmental polity; and, second, because education is and always has been expensive, and North Carolina's wealth

is of recent acquisition. In public health and public welfare we started almost abreast of the other states; but in public education most of them had, and maintain to this day, a long lead.

Nevertheless that lead is being overcome—not as fast as it will be during the next ten years, but for all that, it is being steadily overcome. We have a superintendent of public instruction gifted with energy, determination—and rarest quality of all—a perfectly desperate courage, politically. Brooks has boldly attacked the problem of certification of teachers, and, regardless of the yells of the incompetent and the timorous, has brought some sort of order out of chaos. He has likewise put through a standardization of teachers' salaries that grows more amazing in retrospect. Appearances indicate that if he is given half-way decent support he will yet raise the teaching profession in this State to a level comparable with the trade of a brickmason, say, or a plumber. Therefore, while the North Carolina Department of Education is as yet far from being among the best-developed in the Union, we do not believe that many will surpass it in its present rate of progress; so it is only a question of maintaining that rate.

After all, is not the matter for greatest pride less the fact that North Carolina excels, than the fact that she excels in these particulars? It would be a "talking point" if we had the strongest department of banking, or the best-organized state police, or the most active state board of trade; but it seems to us a greater thing to excel in what may be termed the modern humanities. Public health, the care of the under-privileged child, public education—these things appertain to the production of men. And the production of men is far more to be desired than the production of wealth, as the object of a state's policy.—Greensboro Daily News.

#### A WISE MAN

In December, 1920, Mr. \_\_\_\_\_ of \_\_\_\_\_, N. C., had a case of diphtheria at his home. He received a

letter from the North Carolina State Board of Health asking about his child and telling him that the North Carolina State Laboratory of Hygiene made an antitoxin which is of the highest grade, for which he would have to pay 25c. This letter interested him, as we hope it does every one who receives a copy.

A few days ago we mailed to him and to all others at whose homes we knew that a case of diphtheria had existed during 1920 the following letter:

DEAR FRIEND:

We regret that you had a case of diphtheria in your home last year. We appreciate the care you took to keep this disease from spreading to others in your home or community.

In the future you will be responsible if you have a case of diphtheria, as the North Carolina State Board of Health is preparing to furnish the doctors and the Health Officers toxin-antitoxin. When three doses of this are given, the person is protected against diphtheria for several years, possibly for life.

Often a child who has had diphtheria keeps the germs in his nose and throat for quite a while. He spreads the disease to others. Toxin-antitoxin protects you against such people. Every child between six months and sixteen years of age, especially up to six years, may need this treatment. It takes about eight weeks for the treatment to become effective. As we have lots of diphtheria in the early fall, start this treatment NOW. Almost as many people died of diphtheria last year as died of typhoid fever.

SEE YOUR DOCTOR OR  
HEALTH OFFICER NOW.

SAVE YOUR BABY; IT CAN-  
NOT SAVE ITSELF.

Yours very truly,

J. S. MITCHENER, M.D.,  
*Collaborating Epidemiologist.*

This was sent (1) to show that we appreciate the coöperation and interest of the public; (2) to let every one learn that diphtheria itself can be prevented, and that the North Carolina State Board of Health is now ready to do all it can, and (3) to inform people that when a child has had diphtheria it may be a carrier and a source of danger to others who should protect themselves by taking toxin-antitoxin.

We received the following letter in reply. It is one of the many which find their way to us and make us feel that our efforts are worth while:

\_\_\_\_\_, N. C.  
May 21, 1921

Dr. J. S. Mitchener,  
Collaborating Epidemiologist,  
Raleigh, N. C.

Dear Sir:

I have your letter of the 19th inst., relative to a case of diphtheria in my family last fall, and thank you for your interest. Dr. \_\_\_\_\_ is my family physician, and I will call his attention to your letter.

Permit me to say, on the first Monday in last December I went before the board of county commissioners of this, \_\_\_\_\_ County, and made a statement of the conditions of this county, and of the high cost of commercial antitoxin, and they ordered the county physician to see that an ample supply was kept in reach, so it could be furnished to our people. Dr. \_\_\_\_\_ told me he had made arrangement with the druggists to handle it at a reasonable per cent. I hope it is being done, and every doctor and druggist who charges one to twelve dollars for one dose should be turned over to Governor Morrison to help him in his good roads project.

If antitoxin is what it is claimed to be, and it is, it should be in the reach of every victim of diphtheria in the State, and the people should be let know about it.

Please excuse my advice, and charge it to my sympathy for the

poor people who are victims of this dread disease, and I am glad the State is trying to protect them.

Respectfully,

(signed) \_\_\_\_\_

What has this gentleman done? He has set an example for you to follow. He has placed diphtheria antitoxin at a minimum price in reach of all in his community, and this will help the needy and may save a life. He has followed our suggestion and taken up with his physician the possibility of his children needing toxin-antitoxin. Thus he may save the life of his own child and prevent the cost of sickness.

"Go thou and do likewise."—J. S. M.

### YOUR FAMILY DOCTOR AND TOXIN-ANTITOXIN

Possibly when you know that the Medical Society of North Carolina has endorsed the use of toxin-antitoxin, what the health officer says will appeal to you. The doctors who specialize on diseases of children, knowing the benefits of this preparation for prevention of diphtheria, passed resolutions, not only endorsing its use, but also asking that the State Laboratory of Hygiene furnish it at as low a cost as possible. The same resolutions were endorsed by the conjoint session of the North Carolina Medical Society and the North Carolina State Board of Health.

Your family doctor may have been at this meeting. If he was not, we feel sure he would have been in favor of this progressive step to save the life of your child.

Working under a contract with the county and the North Carolina State Board of Health, local doctors inutherford, Martin, Warren, Randolph, Davie, Greene, Rockingham, Person, Stanly, and Watauga have offered free toxin-antitoxin and the treatment to prevent typhoid fever to every one.

Now who is responsible for sickness from either disease in these counties? —J. S. M.

## THE OPINION OF THE HEALTH DEPARTMENT OF NEW YORK CITY

It is natural for us to desire to learn of the experiences others have had with toxin-antitoxin. We know of no better information than that which can be found at the New York City Health Department. It is here that the best work on toxin-antitoxin has been done and to that source all go for information.

With courtesy of the Bureau of Preventable Diseases, New York City Health Department, we quote extracts from their bulletin. "A Plea To Physicians."

"After taking toxin-antitoxin the infant shows in the great majority of cases neither a local nor a constitutional reaction.

No lasting deleterious effects have occurred.

Some 2400 infants of an age under one week have been treated with abso-

lutely no bad effect.

The most favorable age period for its administration is between six months and six years.

Our observations have covered nearly 5000 cases, and up to the present time, the protection exists in over 90% of the first hundred treated.

Sixty out of every hundred children between six months and five years are likely to have diphtheria.

About 80% of babies younger than six months are protected by antitoxin derived before birth from their mother's blood."

Why will not the mothers of our State hear the above testimonials and take their child to the Health Officer or doctor for toxin-antitoxin? They read the patent medicine advertisements and buy not only useless but often harmful drugs. The health departments love you for your life; the patent medicine man loves you for your dollars. So why not follow our advice?—J. S. M.

## DIPHTHERIA---THE GIANT BABY KILLER

By Reginald M. Atwater, M.D., C.P.H., Dr. P.H.

Surely in this enlightened age everybody knows that diphtheria can be CURED through the great specific, Diphtheria Antitoxin. Twenty years ago a health department needed to furnish proof that diphtheria could be cured when treated early. Nowadays, the proof is written clearly in the official records of every country and any intelligent person can read the facts for himself.

If you will take the trouble to look up this proof you will find that the number of deaths from diphtheria has been very greatly reduced since the introduction of antitoxin in 1895. In spite of this tremendous saving of lives, diphtheria still rages each year as an epidemic disease. Last year North Carolina had 3422 cases of diphtheria, according to the records of the State Board of Health. That means thirty-

four hundred citizens sick, disabled and weakened and thirty-four hundred lives threatened. The cases still occur in large numbers in spite of the life-saving power of antitoxin, and they will continue until the people realize that toxin-antitoxin will prevent sickness from diphtheria in the same effective way that vaccination will prevent smallpox and typhoid fever.

This new and most valuable medical discovery has been so recently discovered that many persons otherwise well informed do not know of it. But here is the point—the fact that this wonderfully successful method is new is no reason why we should not have the advantage of its use NOW. True, five years from now everybody will know that sickness from diphtheria can be prevented as well as deaths from diphtheria. The farsighted men and



women of today, the parents of the coming generation, are those who are cordially welcoming this new but most valuable procedure in preventive medicine. The time will come when it is as much of a sanitary disgrace for a family to have a case of diphtheria as it is to have a case of typhoid fever. Public opinion will create this situation.

Here is the evidence that establishes the value of the toxin-antitoxin treatment to prevent diphtheria: For twenty years this same method has been in use constantly to produce in animals an immunity to diphtheria in the form of antitoxin. All the diphtheria antitoxin on the market today is produced by the use of this principle. In the last six years these facts have been applied to the prevention of diphtheria in children. Such physicians as Dr. Park, the head of the New York City Health Laboratories, have shown that three simple treatments with toxin-antitoxin at intervals of one week will make fully 90% of those treated completely immune to sickness from diphtheria, as shown both by Schick tests and by the fact that these persons after treatment can carry in their throats virulent diphtheria germs without any sickness following. Toxin-antitoxin correctly administered will prevent diphtheria, and this protection lasts indefinitely, in most cases for life.

With this proof of the efficiency of toxin-antitoxin before us, the next step for North Carolinians to consider is how can we make this new discovery of the greatest effect in our State? If New York, New Jersey and Pennsylvania use this method widely and get most satisfactory results from it, that fact will not do North Carolina one bit of good. In the same way, if our neighboring counties and cities use the method it will not prevent diphtheria among our own children. *This is a personal affair with every parent.* It is on this point where the success of toxin-antitoxin in preventing diphtheria will turn. If parents show the interest in the welfare and health of their children that they should, then diphtheria will no longer be able to choke our babies and poison our older

children. But if we expect the State Board of Health to do it all and if we neglect our personal coöperation, then North Carolina is going to miss one of the biggest and best health opportunities that ever came to the State.

Let us stop and analyze the 3422 cases of diphtheria which occurred in the State during 1920. These were almost all white persons. Negroes are very largely immune. No less than half of these cases occurred in the first seven years of life, while  $\frac{3}{4}$  of them occurred in children younger than 12 years. What does this signify? In short it means this, diphtheria in North Carolina is a children's disease. Adults are much more immune. It is the very principle of toxin-antitoxin to hasten the appearance of this adult immunity. A study of the deaths from diphtheria in North Carolina will show that the disease is not only more prevalent at the younger years of life, but also more fatal in those years. For every 100 children who take diphtheria under one year of age about 25 die in spite of everything that is done. During the first year more than 20 out of a hundred die, while even at three years of age 10 out of each 100 succumb to the attack. That is, diphtheria is most prevalent and most fatal in the years of infancy and early childhood.

If 1921 is going to be the banner year in low diphtheria that the State Board of Health insists that it shall be, then you can easily see that *it is these babies and very young children who must be protected against the ravages of this disease.* How can the great help of toxin-antitoxin be made available to these youngsters? They are not in school where the Health Officer can reach them in groups. They are scattered all over the State in the homes of our people. We parents ourselves must see to it that each child has this series of three simple injections, which can be procured through the regular doctors, the Health Officer, or, in certain counties, through special clinics under the direction of the State Board of Health. Otherwise these fine children will be easy victims for this pestilence.

Another lesson to be gained from

these facts is that putting off this treatment is most dangerous. It is when the children are young that they most need this protection. They will never need it more than they need it today. Opportunity of this kind may not knock again at your door before the specter of diphtheria knocks there. Remember that it is the youngest in *your* home who is most likely to be chosen by the unwelcome visitor and the youngest who most frequently falls the victim in the fight. Better a realization of the worth of a child in your arms *now* than a sweet epitaph on a tombstone after it is too late.

Some folks debate the question of taking trouble to have their children protected against diphtheria, and they ask why the Health authorities do not stop diphtheria with quarantine and isolation. If these very folks would come to the offices of the Bureau of Epidemiology at Raleigh, they would see what extensive efforts are made to do everything possible with quarantine in the control of this disease. Diphtheria, however, spreads in spite of quarantine. No method has yet been devised to find and quarantine all the perfectly well folks who carry diphtheria germs in their noses or throats and do not even know that they are very dangerous to everyone they meet. Diphtheria will spread through these people even though every child with the disease is kept in perfect quarantine. Something beside quarantine is necessary to prevent diphtheria, and this very need is met by toxin-antitoxin.

Diphtheria is not a foreign disease

which makes occasional inroads at some port city, spreading radially from there. Diphtheria is like the poor who are always with us. Diphtheria is scattered through every community most of the time, and when Fall and Winter come the youngsters begin to develop the telltale croupy cough or severe sore throat, and from then on the disease is entrenched to make its attack on the weakest but fairest among us—the babies. No one can tell when he will be next exposed to a carrier or to a mild case of the disease. Every parent must realize that *he* can carry home to *his own children* these germs, although he may never know where he got them.

During the past winter when diphtheria was very prevalent, out of a large number of persons who had diphtheria, less than 30%, or one out of three, had even the remotest idea where he could have "caught" the disease. But that fact was no alibi, any more than it will be if you or your children are the next victims. There is only one safe and sure way to prevent this calamity, and that is by using toxin-antitoxin.

In conclusion, the folks of North Carolina have an opportunity *now* to make their homes, schools and State free from diphtheria. This is worth while in itself, but there is also an opportunity for North Carolina to lead the States in this matter and show how quickly we will grasp the hand of Opportunity knocking at the door. Will *your* child be protected? Better safe than sorry.

## DIPHTHERIA---THE STRANGLER

By J. S. Mitchener, M.D.

Diphtheria germs, like all other germs, have special parts of the body where they can thrive better and throw off their poison into your system. This poison makes us sick and may kill us. These germs find suitable places for growth in the throat about the tonsils, soft palate, etc., in the larynx on the vocal cords or that part

of the throat which is on the inside behind the "Adam's Apple," and in the nose.

### Diphtheria of the Throat

When the germs of diphtheria locate in the throat or on the tonsil, one has what is usually called diphtheria. It is impossible to tell you so that you

yourself can decide if your child has diphtheria or "just sore throat." A mild case of diphtheria will affect a child like ordinary sore throat; a severe one gives the person fever, chills, convulsions, a very sore throat and very often a choking or strangling sensation, depending upon the amount of membrane found.

The mild case often does more real harm than the severe one. If a child that is only feeble and has little soreness is not put under the care of the doctor, and is not quarantined, the disease spreads. Many severe cases and deaths often follow. It is from such cases as these that so many people catch diphtheria and do not know "where they got it from."

*You should consult your doctor about every case of sore throat. You don't know and he can find out the trouble. This is especially true of children below six years.*

### Diphtheria of the Larynx or Membranous Croup

Above, we told you about diphtheria of the throat, or the tonsils and soft palate. Now we wish to tell you about diphtheria of the larynx. This is better known as membranous croup. Such a name is given because the diphtheria germs cause a membrane to form and the signs and symptoms are very much like croup. *There are two differences between ordinary croup and the membranous croup which every mother should know. Ordinary croup usually comes on suddenly. In membranous croup, as a rule, the child shows evidence of sickness before it seems to be croupy. Ordinary croup more often comes on during the night and gets better in the morning; mem-*

*branous croup appears at any time and gets worse until diphtheria anti-toxin is given.*

### Diphtheria of the Nose

Diphtheria of the nose is found most frequently in young children. If the disease does not attack the throat and larynx, the symptoms are usually mild. The disease makes its presence evident by causing continuous bloody, nasal discharge, which makes the upper lip raw and sore. Such will last for several weeks, and you would not suspect the trouble until you heard of other children having diphtheria who had been about children having such a nasal condition. A culture of the discharge from any nose like this should be sent to the State Laboratory of Hygiene for examination.

### The Strangling or Choking Disease

If you will look at the picture on the back of this bulletin, you will see that diphtheria wishes to get the throat of every child in his clutches and choke him. It causes a white membrane to form and this membrane really strangles or chokes the child to death. Such happened to about 200 children under six years in North Carolina during 1920. Those that do not die because of the strangling are killed by the diphtheria toxin or poison being taken by the blood to the heart and destroying its muscle so badly it cannot beat.

*Remember that croup and sore throat kill too many babies to let a grannie, your neighbor, or yourself treat your child. Assume no risk. Call your doctor, and if he advises diphtheria anti-toxin, let him use it. Prevent the disease. When your child becomes six months of age, give it toxin-antitoxin.*

## DIPHTHERIA CARRIERS

By J. S. Mitchener, M.D.

"Doctor, I don't know where in the world Sallie could have caught diphtheria. She has not been about a person the least bit sick of any disease in months."

This is what every health officer and doctor has heard time and time again. The mother told the truth when she said she did not know, and it is practically impossible for any

one to tell where just one case is caught. But this we are certain of: *When any one has diphtheria he has come in contact with a diphtheria carrier and has put into his mouth some of the spittle from the mouth of this carrier.*

In this little article we wish to tell you about diphtheria carriers, how they spread the disease and how to guard against them. We will define a diphtheria carrier as a person who may show no signs of the disease, but yet has the germs of that disease about the tonsils or in the nose. At times the presence of these germs can be proved by taking a culture from the nose and throat.

The most likely way for a person to become a "carrier" is by having the disease. The antitoxin that you take kills the poison that the germs make, but does not injure the germ. The germs are destroyed in several ways, in most instances after a few days. This is not always the case, however, as you will see from the following table, which is the work of Doctors Park and Beebe of the New York City Health Department. They examined 752 cases of diphtheria and found that "In 325 cases, or in 43.2 per cent, the bacilli disappeared within three days after the complete disappearance of the exudate; in 427 cases, or in 56.8 per cent, they persisted for a longer time, viz.

In 201 or 26.7 per cent for 5 to 7 days	
84 " 11.1 " " "	12 "
69 " 9.1 " " "	15 "
57 " 7.5 " " "	3 weeks
11 " 1.4 " " "	4 "
5 " 0.6 " " "	5 "

There is a second group of people who are carriers, and at the time they are a source of great danger. They are those who had "just ordinary sore throat" and did not consult their doctor for a culture to be made, but went anywhere they pleased. Some of these become carriers like those spoken of in the preceding paragraph.

The third group of carriers are nurses and others who have been thrown in contact with any person sick with diphtheria or who have been thrown with a "carrier." They themselves become "carriers," but never

show any signs of the disease, as they are protected by nature against it.

It is estimated that about 1% of the entire population are diphtheria "carriers." Thus it is amazing that we do not have more diphtheria than we do. Fortunately the contact between the carrier and the other person must be intimate in order for some of the carrier's saliva or spray from his mouth which is loaded with the germs to enter the mouth of the second party. This saliva is conveyed by eating and drinking after each other, putting pencils, fingers, etc., about our mouth, getting too close together to talk, children playing with the same toys, etc. When we get a dose of a carrier's spittle, it must be sufficient to give us the disease. Fortunately most of the grown people are not susceptible to diphtheria, but the young, especially between six months and six years, are.

It is hard to detect carriers sometimes. When we find them it is almost impossible to relieve them of this unfortunate condition. What can we do to guard against the danger of these carriers? Give every child between six months and six years toxin-antitoxin, because 75 out of every 100 deaths from diphtheria are among children within such age limits.

The average person should drink more water in summer than in the colder months of the year. This supplements nature's efforts to cleanse the body through the pores of the skin. Drink cool, but not iced, water. The greatest danger from iced water is from its excessive use. To persons who are overheated, or who work in high temperatures, iced water is frequently dangerous. It may produce congestion, better known as cramps of the stomach, and more frequently is the cause of indigestion.

All kinds of excesses should be avoided at all times, but more especially during the hot months. Be moderate in everything. That is the golden rule for a long and happy life.

# PELLAGRA--ITS NATURE, PREVENTION AND TREATMENT

By Joseph Goldberger, Surgeon, U.S.P.H.S.

In the following paper an attempt is made to answer, as simply as possible, the more important questions which the general public frequently asks in regard to pellagra.

## SYMPTOMS

Although the fully developed disease makes a picture which, when once seen, can hardly ever be wrongly diagnosed even by one who is not a physician, the recognition of the disease is by no means simple, because the fully developed or classical types of cases form only a small portion of the total.

The following sketch of the symptoms is presented, therefore, not with the idea that it will enable the untrained to recognize the disease, but rather to call attention to those symptoms or combinations of symptoms which should be looked upon as suspicious and as calling for the simple and effective measures of prevention to be outlined.

In a fairly well developed though not advanced case the disease shows itself by a variety of symptoms, of which weakness, nervousness, indigestion, and an eruption form the most distinctive combination.

*Eruption.*—The eruption is the most characteristic telltale of the disease and the main reliance in its recognition. When the eruption first shows itself it may look very much like a sunburn, the deceptive resemblance to which may, in some cases, be heightened by the subsequent peeling with or without the formation of blisters. In many cases the inflamed-looking skin first turns to a somewhat dirty brown, frequently parchmentlike, then quickly becomes rough and scaly, or cracks and peels. In many instances, however, the beginning redness is not noticed or does not occur, the first and perhaps the only thing observed being the dirty-looking scaly patch of skin very much like and frequently thought to be no

more than a simple weathering or chapping.

Among the most distinctive peculiarities of the eruption is its preference for certain parts of the body surface. The backs of the hands in adults and the backs of the feet in children are its favorite sites. Other parts not infrequently attacked are the sides or front of the neck, or both, the face, the elbows, and knees. From these or other points, for it may attack any part of the body, it may spread to a varying degree. Another marked peculiarity of the eruption is its tendency to appear at about the same time, and to cover similar areas, both as to extent and peculiarities of outline, on both sides of the body. Thus it may be stated as the rule that if the back of one hand or of one foot, one elbow, one knee, one side of the neck, one cheek, or the lid of one eye is affected, then the corresponding part on the other side of the body is affected, and affected to almost exactly the same extent. This rule, however, is not without many exceptions. It must not be assumed, because the back of one hand or of one foot or of one side of the neck alone seems to be involved, or is involved to so slight an extent as to be almost nothing in comparison with the involvement of the other side, that the possibility of the disease being pellagra may be thrown out of court without further ado.

*Suspicious symptoms.*—Although the main reliance in the recognition of the disease, the eruption of pellagra not infrequently is very tardy in making its appearance. While, until it appears, it is ordinarily impossible to determine the presence or absence of the disease with certainty, a shrewd suspicion may, nevertheless, be formed from a careful consideration of the other symptoms. This applies only to a limited extent to children, in most of whom the manifestations of the dis-

ease, other than the eruption, are slight and frequently difficult or impossible to make out. It has happened more than once in the experience of the writer that the liveliest of a group of children was found with a well-developed eruption. Notwithstanding this, however, careful questioning of the mother, if she be observant, not infrequently develops the fact that the child seems to her less active than common; in some cases it is evidently listless and fretful and the mother may also recognize that it has fallen off in weight. In older individuals a complaint of loss of strength with indigestion or nervousness or both coming on or made worse in the spring or summer and improving in the fall and winter are very frequently met with. The patient will complain of being "worked out," of having "blind staggers" (dizziness, vertigo), of discomfort or pain in the pit of the stomach, frequently of headache, sometimes of wakefulness, frequently also of sluggishness of the bowels, requiring the habitual use of medicine to move them. Although, as has already been said, these symptoms alone, or even with the addition of such symptoms as a burning or scalding feeling of the mouth, reddened tongue, burning of the hands or feet and loose bowels, are not enough to distinguish pellagra from other conditions, they are ample to justify a suspicion of the disease, especially if such individual is known to be finicky or a nibbler about food, or has been living on a diet made up largely of biscuits, corn bread, grits, gravy, and sirup, with little or no milk or lean meat; in other words, on a diet mainly of cereals, starches, and fat, with but little, if any, of the animal flesh (protein) foods.

The suspicion of pellagra may with confidence be dismissed in one who is known to be, and to have been, a habitual milk drinker and meat eater. It is well to be warned, however, that it is very easy to be misled about what and how much the individual actually eats.

*Insanity.*—In a small proportion of cases, fortunately much smaller than is commonly believed, the mind is affected to a degree requiring asylum

care. Many of these cases get well under treatment. Recovery of the mind is not to be expected, however, where the pellagra occurs in a person whose insanity is due to some other (incurable) cause.

#### IMPORTANCE AND DISTRIBUTION

Under proper treatment and with careful nursing only a small percentage of cases die; nevertheless, the actual number of deaths is deplorably large. Indeed, in nearly all the Southern States pellagra is one of the foremost causes of death. Thus, in 1916, it ranked fourth in Mississippi, third in Alabama, and second in South Carolina. In that year, probably an average one so far as pellagra is concerned, this disease was charged with having caused 677 deaths in Alabama, 840 in Mississippi, 467 in North Carolina, 627 in South Carolina, 607 in Tennessee, and 452 in Texas, or an aggregate of some 3,700 deaths for these six states alone. As the fatality rate, counting all types of cases, was probably not in excess of 5 per cent, it can readily be seen that not only is this disease among the most important as a cause of death, but it probably ranks with the first in importance as a cause of sickness and lowered physical efficiency of the people in the area affected. In the six states named there probably occurred some 70,000 definite cases of pellagra. As it is quite safe to assume that there were in the remaining 7 of the 13 states south of the Potomac and Ohio rivers—the section most seriously affected—at least half as many more, there probably occurred in this region in 1916 upward of 100,000 cases. The incomplete figures at hand indicate a considerable increase of the disease in 1917. It seems safe to assume that this increase averaged about 25 per cent, so that it may be estimated that in 1917, in the part of the country mentioned, fully 125,000 people were attacked.

In other parts of the country the disease is very much less common. The explanation for this has not been fully worked out. It depends in part, at least, on a difference in dietary habit. The people of the South are known to eat much less of the animal

foods, such as milk and lean meat, than do the people in other sections. This, in its turn, is due in part to the fact that, by comparison, much less of the animal foods is raised in the South, and, therefore, in many localities they are hard to get or are too expensive for poor people to buy.

#### RELATION TO LIVING COST

It is the poor man who is the chief sufferer from this disease. This explains why hard times, especially when accompanied by rising food prices, are likely to be followed by an increase in the disease. This is well illustrated by the great increase that took place in 1915 following the hard times brought on by the outbreak of the war in Europe in the summer of 1914, and by the great decrease in 1916 following the improvement in conditions that developed during 1915. Unfortunately, the upward trend of living cost in the fall and winter of 1916 brought about an increase of pellagra in 1917 in many localities, an increase which was forecast months in advance by the United States Public Health Service.

#### CAUSE

*Pellagra not "catching."*—The apparently rapid spread of the disease following the discovery of its presence in this country about 10 years ago caused great alarm and with certain other circumstances gave rise to the opinion that pellagra was a communicable disease. Fortunately, the investigations of the Public Health Service now permit one to answer the oft-repeated question, "Is pellagra catching?" in the negative.

Experimental tests and careful observations show that pellagra is not a communicable disease. No germ that can properly be considered its cause has ever been found. Attempts to give persons pellagra by inoculations of blood or saliva and other body discharges from severe cases of pellagra have failed completely. On the other hand, when 11 convicts were fed on an unbalanced diet composed mainly of biscuit, corn bread, grits, rice, gravy, and sirup, with only a few vegetables and no milk, meat, or fruit, at least six developed the disease. In an asylum where many of the inmates de-

veloped pellagra year after year it was observed that the doctors, nurses, and helpers who lived with them never developed the disease. The only discoverable reason for the exemption of the nurses and helpers was a better diet. The nurses and helpers had a liberal allowance of lean meat and some milk, while the inmates had very little or none. When this observation was tested by giving the inmates a better diet—that is, by giving them more meat, milk, fruit, and vegetables—it was found that the inmates stopped having pellagra. This test was also carried out at three orphanages where there had been many cases in the children every spring for several years, and always with the same result. After the diet was improved, although no other change was made, pellagra disappeared. Attempts to prevent pellagra by supposedly other means have succeeded only when, whether intentionally so or not, some change in diet took place at the same time.

*Caused by unbalanced diet.*—These facts, together with others not mentioned here, show that pellagra is caused by eating a faulty or unbalanced diet, and that people who consume a mixed, well-balanced, and varied diet, such, for example, as that furnished to our soldiers and sailors, do not have the disease. In other words, if all persons provided themselves and ate a well selected and properly varied diet there would be no pellagra. It is very important to realize that having good food on the family table is of itself not enough to keep one from having pellagra. There may be plenty of milk and eggs or meat, but if you don't eat them, or if you just pick at them and prefer to live, as the convicts in the experiment lived, mainly on cereals, starchy foods, and sweets, the milk and eggs will do you no good, and if you persist long enough pellagra may result.

#### BALANCED RATION PREVENTS PELLAGRA

A properly selected or well-balanced diet is one that includes in sufficient quantities and in proper form all the elements needed by the body for its healthy growth and normal activities. In order that a proper balance may be

assured, the diet should include, besides the cereals, starches, sweets, and fats, a sufficient quantity of milk or some lean meat and an abundance of green vegetables and fruit and preferably some of all of these classes of foods. How such a diet operates to prevent pellagra or, indeed, just how an unbalanced or faulty diet acts so that the symptoms of pellagra are developed is still obscure and the subject of study by many scientists. The vitally important practical thing, however, is that the right kind of a diet will keep people from having the disease and will cure those who have it if the cases are not too far advanced.

*Milk* is the most important single food in balancing a diet and preventing or curing pellagra, and when lean meat, green vegetables, and fruits are for any reason not included in the diet or only infrequently or in very small quantities, it is most important that at least three glassfuls ( $1\frac{1}{2}$  pints), and preferably more, of milk (sweet or buttermilk) be taken daily. This single addition to the customary daily diet will in practically all instances protect the individual from an attack of pellagra. Milk for the family in these quantities is, however, frequently hard to procure. For this and other reasons it is wiser under such circumstances to use certain other classes of foods as substitutes or, preferably, as additions to the available milk supply.

*Lean meat* (fowl, fish, pork, beef, etc.) helps in an important degree to give proper balance to a diet, especially the diet of those who take but little milk. Under these circumstances an allowance of half a pound at least three or four times a week should be made. Part of the meat may be replaced by eggs or cheese. It will be wiser, however, not to make any reduction in the meat allowance recommended, but rather to add eggs and cheese to the diet.

It is often declared that Americans eat too much meat. No doubt there are many who do. It is important to recognize, however, that there are even more who do not eat enough.

In seasons when lean meats are difficult to procure or are excessively expensive, the use of the dried soy bean

as a substitute for flesh food is to be highly recommended. It is but little known and relatively little used as human food in this country, though an extensively used staple in the Orient. From a nutritive standpoint, it is probably the most valuable of the dried beans and peas. Recent studies have shown it to be decidedly superior to the dried navy bean, lima bean, and the pea. The soy bean may be eaten boiled or baked, and, in the form of soy-bean meal, may be included to great advantage in the biscuit or the corn bread to the extent of one-fifth to one-fourth of the flour or corn meal.

Generous helpings of green vegetables (cabbage, collards, turnip greens, spinach, string beans, or snap beans), or fruits (apples, peaches, prunes, apricots), and preferably of both, should be included in the daily diet, especially when milk is not used or used only in small amounts. This is particularly important during the late winter and spring, the season when people have the fewest number and the least variety of things to eat.

As an illustration of the practical application of the above recommendations for a health-preserving, pellagra-preventing diet, the following outline of a bill of fare is presented:

#### PELLAGRA-PREVENTING BILL OF FARE

##### *Breakfast*

Sweet milk, daily.

Boiled oatmeal with butter or with milk every other day.

Boiled hominy grits or mush with a meat gravy or with milk every other day.

Lightbread or biscuit (one-fourth soy-bean meal), with butter daily.

##### *Dinner*

A meat dish (beef stew, hash, or pot roast, ham or shoulder of pork, boiled or roast fowl, broiled or fried fish, or cream salmon or codfish cakes, etc.), at least every other day.

Macaroni with cheese, once a week.

Dried beans (boiled cowpeas with or without a little meat, baked or boiled soy beans with or without a little meat), two or three times a week.

Potatoes (Irish or sweet), four or five times a week.



Rice, two or three times a week, on days with the meat stew or the beans.

Green vegetables (cabbage, collards, turnip greens, spinach, snap beans or okra), three or four times a week.

Cornbread (one-fourth soy-bean meal), daily.

Buttermilk, daily.

#### *Supper*

Lightbread or biscuit (one-fourth soy-bean meal), daily.

Butter, daily.

Milk (sweet or buttermilk), daily.

Stewed fruit (apples, peaches, prunes, apricots), three or four times a week, on days when there is no green vegetable for dinner.

Peanut butter, once or twice a week.

Sirup, once or twice a week.

It will be recognized that this bill of fare is primarily for older children and adults. The intelligent housewife will, of course, make such modifications as the age of her children, the tastes of her family, and her particular circumstances suggest or make necessary. Various additions may be made to give greater variety and attractiveness to the meals. The quantities of some of the foods may be reduced and replaced, in part or in whole, by other similar foods, but so far as possible no reduction should be made in the quantities of milk and lean meats. In case of young children eggs make a very desirable addition and the relative quantity of milk allowed them may be advantageously increased.

#### TREATMENT

While the above recommendations have in view primarily pellagra prevention, the same diet serves satisfactorily also in the treatment and cure of the average case. For severe cases a more liberal allowance of milk should be made and eggs added. In some instances, in fact, only liquids can be taken. In these, milk, fresh-meat juice, meat broth, pea, or potato puree, and pot-liquor should form the diet until more substantial food (milk toast, soft-boiled or coddled eggs) can be added. The food should be given at regular intervals just as is done with medicine. Indeed, for the cure of pellagra the only medicine we have

is the diet. The only use that medicines serve in pellagra is the alleviation of painful symptoms and in the treatment of complicating conditions. The sooner this is realized the sooner will the quacks, both within and without the profession, be put out of business. The money that is now being wasted on useless and quack medicines is well-nigh sufficient to procure for the poor, deluded sufferers the food from the lack of which they are suffering.

A change of climate is of itself not essential in the treatment and cure of pellagra. A change from city, village or "camp" to a farm in the country has not infrequently been found to be beneficial. The benefit derived is to be attributed, however, not to the change of air, as is commonly thought, but rather to the fact that in the country the diet is improved by an abundance of milk, eggs, etc. Practically all the benefits of a "change of climate" may be had at home at the cost of two quarts of milk and half a dozen eggs or half a pound of stew beef a day.

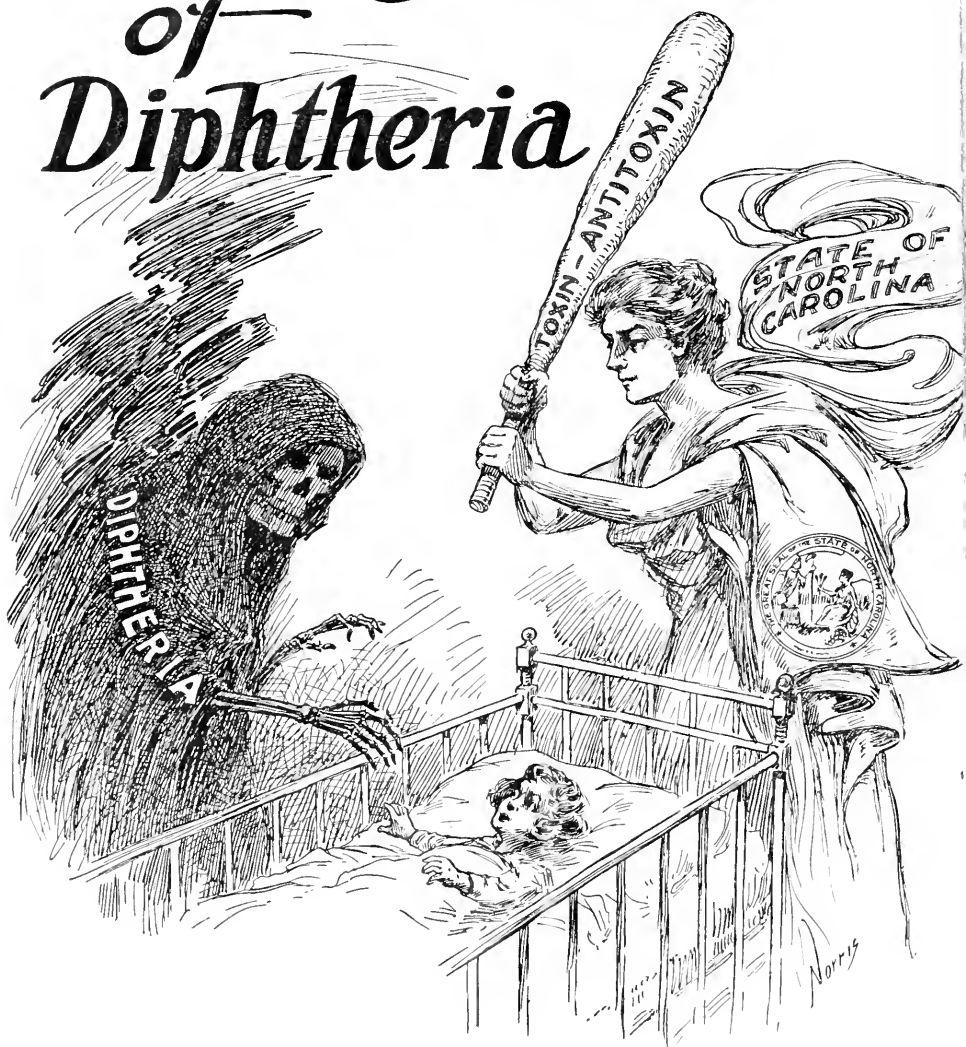
The patient should be warned that a proper diet is not to be considered as a temporary thing which can be dispensed with after recovery from the attack. To avoid a recurrence of the disease and permanently to maintain health and vigor a properly selected diet is essential and must be maintained at all times. It is worth while emphasizing that if all people provided themselves and, at all times, ate a well-balanced diet, pellagra would disappear from the face of the earth. The gain to the country from the consequent reduction of sickness, invalidism, and death, and the increased physical vigor and happiness of the people, cannot be overestimated.

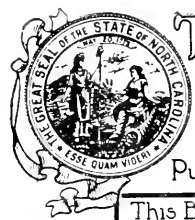
#### THEN THE FUN BEGAN

A reporter was misinformed, and the obituary of a live man appeared in the Dalby Tribune. Of course, the live man was more or less indignant about the error, and rushing to the telephone, called the editor. "I see in your dirty old sheet that I am dead," he snorted.

"Yes," replied the editor. "Where are you speaking from?"—Atchison Globe.

# Breaking the Grip of Diphtheria





# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

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The season approaches when "bad colds" will become more or less prevalent throughout the State, affecting both adults and children. The latter are especially susceptible, and the fact that they are so closely associated together in large numbers in the school rooms means rapid spread of the infection when once started. Colds, and all the diseases of the respiratory organs, are spread by the discharges from the nose and mouth. The spread of these diseases can be largely controlled through two simple measures of personal sanitation. Always cover the mouth and nose when coughing or sneezing; and keep the hands clean.

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### FREE HEALTH LITERATURE

The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in.

WHOOPIING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
CARE OF THE BABY  
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FLIES  
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SMALLPOX  
ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES  
CATARRH

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### FOR EXPECTANT MOTHERS

Rose M. Ehrenfeld, R.N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend send name to the State Board of Health, and give approximate date of expected confinement.

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### THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for The Bulletin each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.

# THE Health Bulletin

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Vol. XXXVI

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## FRAUDULENT EYE SPECIALISTS

Unscrupulous men pretending to be eye specialists have been operating in a number of different sections of the State and fraudulently advertising themselves as representatives of the State Board of Health, according to reports which have reached the office of the Secretary.

Reports of such operations have been received from Caswell, Buncombe, Wilkes, Cumberland, and Wake counties. In all instances the reports indicate that the operators have been visiting the smaller towns and rural sections, posing as representatives of the State Board of Health sent out to give free examinations of the eyes, and then fitting and selling glasses. Apparently they have usually confined their operations to a few days in a given community, and then moved on to fresh pastures.

In view of these reports, warning is given that the State Board of Health does not have, nor has it ever had, any eye specialist engaged for field duty for the examination of the eyes of the people and the fitting of glasses. From time to time in the course of the medical examination of school children, and in connection with the examinations made at the tonsil and adenoid clinics held by the Board, children manifestly in need of attention for their eyes have been referred to their family physicians for advice. Alleged eye specialists who make a practice of travelling through the country, giving carelessly superficial examination of the eyes and fitting glasses, should be avoided. Any such person claiming to represent the State Board of Health, and holding out such claim as an inducement for patronage, is a fraud.

## UNNECESSARY ALARM

From sections of the State where the boll weevil has made its appearance inquiries have been made which show that there is more or less prevalent a wholly unfounded fear of this destructive insect. These inquiries state that reports are current to the effect that the boll weevil is attacking garden vegetables, such as beans, peas, okra and the like, and that to accidentally eat one along with these vegetables means death.

As a matter of fact the boll weevil confines its activities entirely to the cotton boll, whence came its name. The destruction which it causes among the cotton plants comes from the fact that it eats the interior of the green boll, and not from the fact that it poisons the plants. Even should one be swallowed, which is unlikely, there is no more reason for bad results than arise from the countless number of small insects and worms that are daily cooked and consumed by people who are careless in the preparation of vegetables for use.

## PHYSICAL EDUCATION IN HIGH SCHOOL

A fair load for a boy or girl in high school to carry is five subjects, of which one should be gymnasium or physical work and another should be anthropology. In each of the four years of high school work one-fifth of every day's time should be given to gymnasium or athletic or other physical training, and one-fifth of every day's time should be given to the several branches of anthropology—*anatomy and physiology, physics and chemistry, hygiene and sanitation, embryology and human reproduction.*

I would teach the boy and girl in high school what every reasonably well educated man or woman ought to know. I would give the same credits for satisfactory work in the physical training department and in the department of anthropology as are given for satisfactory work in the department of mathematics or languages. Of course, these subjects cannot be taught by untrained teachers. Physical education is quite as important and valuable as any other branch of education and demands quite as thorough preparation on the part of one who essays to teach the subject.

The old Greeks knew the value of physical education. They gave about half of the schoolday to the training of the body. They were right, too, so far as their culture carried them.

Our modern practice of developing the mind and ignoring the body leads us into strange predicaments. It makes veritable freaks of a great many of us. It makes "highbrows" of too many of us. It fits us for an exceedingly artificial and unnatural life. What we need is something more like a liberal education, education of the whole man, a little knowledge of ourselves and a little less scientific speculation about the ring of Saturn, and the canals of Mars.—William Brady, M.D.

### FOR CRIPPLED CHILDREN

The President and Board of Trustees of the North Carolina Orthopaedic Hospital, Gastonia, N. C., wish to announce that the hospital is now open for the reception of patients—children up to fourteen years of age.

This hospital has been built and equipped in a modern manner and a competent staff selected to direct the clinical management of it. You are cordially invited to visit and inspect this institution and to take advantage of it by referring for treatment any cases which, in your opinion, come within its province.

It is the desire of this institution to render service to crippled children, irrespective of their financial condition. Charity service is rendered to

children who cannot pay and a moderate charge will be made to those who are able to pay. Children or others over fourteen years of age may make appointment for consultation with the surgeon-in-chief, if desired.

An application blank will be mailed on request, which when filled out and returned to the hospital, puts a child on the waiting list for a bed.

An out-patient clinic is held at the hospital, every Tuesday at 2 P. M. The operative clinic is Friday morning at nine o'clock.—R. B. W.

### "BURIAL"

The word "burial" is applied to the prevailing method among all civilized nations of disposing of the dead by hiding them in the earth. The usual method of mankind has been to bury the dead out of sight of the living; and various have been the methods of accomplishing this purpose. These methods of burying the dead may be put into three great classifications.

(1) The closing up of the body in wood stone or metal,

(2) The burning of the body and preserving the ashes by putting them in a tomb, and

(3) The embalming of the body. The first of these methods seems to be the earliest form of which we have any record and it is the form most commonly used by the civilized world to-day. It is the method referred to in the earliest Scriptures; and all are familiar with the touching scene in which Abraham buried Sarah in the cave of Machpelah in the land of Canaan which belonged to Ephron, but was later secured by Abraham as a place to bury all of his dead. The first account of getting a burial permit is the permit given Abraham for burying Sarah by Ephron the Hittite.

There are frequent allusions in the Scriptures to embalming the body. Bury is spoken of eighteen times in the Bible.

Probably the Egyptians knew more about the art of embalming than any people before or since their day. There are to-day Egyptian mummies thousands of years old in numbers

of museums throughout the world. These corpses of Egyptians are as inoffensive as any article of wood or stone and are as well preserved as they were the day they were embalmed.

Some of the grandest buildings in the world have been tombs—such as the pyramids of Egypt, the Castle of St. Angelo, the Mausoleum at Halicarnassus, Westminster Abbey, and many temples scattered throughout the world.

Now that the World War is over innumerable beautiful buildings will be dedicated to our dead heroes.

Thus the respect paid by the living to the dead has preserved and will preserve for the world many magnificent fruits of architectural gems and labor. In 1913 North Carolina made a great stride forward in preserving the memory of the dead by enacting the Vital Statistics Law. This law does not stop at preserving the memory of the dead—no matter

how rich or poor, whether of high or low estate, the memory of the deceased is preserved,—and more than this the cause of death is recorded so that health authorities may be able to know the number of deaths from certain diseases that are known to be preventable. They are thereby enabled to concentrate their efforts on certain diseases in certain localities.

Because this information is so valuable the law makers in their wisdom put a severe penalty on burying the dead without making out a certificate of death, giving all particulars of family history over the signature of some one familiar with this personal history, and cause of death over the signature of the attending physician, and filing same with local registrar and obtaining in exchange a permit to bury the deceased. It is to be hoped no one in North Carolina will be so foolhardy as to bury a body without complying with the present reasonable law.—F. M. R.

## NUTRITION OF THE CHILD

By L. B. McBrayer, M.D.

The proper nutrition of the child has much more to do with its future health and mentality than most parents know, or if they know, stop to think about. Lack of proper nourishment in the child is a cause of his failure to pass his grades in a considerable per cent of such cases; that means lack of normal functioning of the ordinary processes of the brain, and not only affects the school work of the child, but all other studies and duties of whatsoever kind, in which the child is called upon to engage.

Lack of proper or normal nutrition in the child also lowers his resistance to diseases. The body has in it what is called fighting forces, which immediately are called to arms when a foe, such as germs of any disease, invades the body, and if these fighting forces are strong they will overcome and kill off and eat and digest

or bury these disease germs and the body remains healthy. In such case the most scientific physician could not detect the fact that these disease germs had entered the body. But if these fighting forces are weakened by lack of proper nutrition they are much more easily overcome by the germs of disease, and the disease germs gain the upper hand of them and the body becomes sick with the disease the particular invading germ causes.

You can readily understand that Dempsey wouldn't prepare for a fight with Carpentier or anyone else by not taking sufficient nourishment and fresh air and exercise. On the other hand he has a physician to look after his body, his lungs, heart, kidneys, intestinal tract, including his digestion and nutrition, and to guard him against taking too much exercise. And he has a man to look after the

particular exercise that will most develop his brain and muscles for the task before him. Any other procedure would mean defeat in the first round.

The most important thing in the life of any person is his ability to take his place in the world, regardless of what that particular place may be. In order to do this, whether he is a laborer or a college president, he must have HEALTH and training. Health comes first, because without it he cannot take the training to fit him for any position in life, whether that place calls for physical effort or mental effort—and it is believed that the one most important thing in the child's life to keep his body in normal condition and admit of this training is proper nutrition.

Now, proper nutrition does not depend solely on what is set on the table before a person, but whether or not the person eats the food—any one can readily understand that. But there is something more important yet, to wit, that the food that is eaten must be of the proper kind as well as the proper quantity, and taken at the proper time; and more important yet, the bodily functions must be in condition to receive, properly digest and assimilate what is eaten, before proper nutrition can be had.

Any disease, therefore, such as enlarged tonsils, adenoids, malaria, tuberculosis, hookworm or any infectious disease interferes with nutrition. It would be desirable to discuss how each disease interferes with nutrition, but that would make this article too long; hence you will have to accept our statement without proof at this time.

Dr. Emerson of Boston, who has devoted much time to the study of nutrition, says there are five things of prime importance in undernourished children: (1) Health habits, (2) Food habits (which would include using of milk and abstaining from coffee), (3) Physical defects, (4) Home control, (5) Overfatigue.

The way to find out whether or not a child is properly nourished, is to use the age, height and weight tables found on another page of this bulletin. These can easily be applied by the

child's parent or teacher. Having found your child is not properly nourished the next thing to do is to consult your physician or the health officer or the public health nurse and find and have remedied all physical defects and disease. Then find out what is lacking in what your child eats or when, where and how he eats, when, where, how and how much he sleeps; when, where, and how much exercise he takes; and have all these regulated in a normal way, which your health officer, or public health nurse or family physician will help you do, and your child will be speedily brought up to a normal state of nutrition and become a normal child physically and mentally.

The Modern Health Crusade in the school is the best way to keep a record of the nutrition of school children. This provides for the regular weighing and marking up of each child on the age, height, weight chart and teaches them health habits, by having the child do them. The pins given as awards for doing a given percentage of health chores and the spirit of wholesome rivalry hold the child's interest in becoming normal. Your health officer or public health nurse or teacher will tell you about this, and you can write the North Carolina Tuberculosis Association, Sanatorium, N. C., for samples of chore cards and other literature.

If parents could only remember that they work together with God in creating their children; and,

That the only immortality that the world will ever see of us is our children, am quite sure we would be more interested in bringing our children into the world with healthy bodies and maintaining healthy bodies for them during that age period when we are held responsible for them by God and Humanity.

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The average person should drink more water in summer than in the colder months of the year. This supplements nature's efforts to cleanse the body through the pores of the skin. Drink cool, but not iced water. The greatest danger from ice water is from its excessive use.



## THE MIDWIFE A FACTOR IN INFANT AND MATERNAL WELFARE

Katherine Myers, R.N.

When health workers are engaged in their "favorite indoor sport" of juggling statistics, nothing receives nor deserves greater applause than the figures showing the remarkable decrease in such preventable diseases as typhoid fever, diphtheria, and tuberculosis. But the diseases caused by pregnancy and childbirth are largely preventable and yet in twenty years there has been no reduction in the maternal death rate and it still stands second only to that of tuberculosis among women from fifteen to forty-four. Of the sixteen largest nations United States ranks fourteenth in this respect and North Carolina contributes to this unenviable record about 575 women per year. The hospitals are filled with women suffering from injury or neglect at childbirth and uncounted numbers are dragging through years of semi-invalidism and inefficiency. These are very real facts to public health nurses who perhaps are in closer touch with conditions than anyone else.

The welfare of the child is wrapped up in that of the mother. More than one-half of the babies who die during the first year die from causes related to the condition of the mother, five times as many babies die in the first month of life as in the second, and fourteen times as many in the twelfth month, most of them babies who were born too weak or too diseased to live and some because their mothers did not know how to safeguard their breast milk nor appreciate the importance of breast feeding.

So much for the problem: now, what is needed to protect maternity and infancy? It cannot be denied that the health and very life of the mother are dependent upon the character of the obstetrical service she receives. The practice of obstetrics has become a highly specialized science which is

difficult to apply to the salvaging of rural mothers and babies.

The distressing lack of medical service in our ten super-rural counties, the concentration of physicians in the towns, bad roads, absence of telephone connections, poverty, ignorance, and custom,—all have combined to foster a service enormously powerful for good or evil. Four thousand midwives are known to the State Board of Health, approximately 34,000 deliveries were attended by them in 1920. Twenty per cent of the white and 80 per cent of the colored employ midwives.

The majority of these women are dependable, selfsacrificing, poorly paid. They refuse no call, day or night, rain or shine. Most of them are past middle age, unable to read and write, and have no training except that gained in rare instances by nursing for and assisting local physicians. Occasionally one is found who reads a "doctor book." They are still plodding along with the knowledge handed down from generation to generation, some of it valuable but interwoven with a mass of misinformation, superstition, and unbelievable fatalism. Their deep ignorance of anything resembling modern asepsis puts into their kind and faithful hands the weapons of destruction.

In practically every European country midwives are under strict State control. They are required to undergo a course of thorough training and their practice is carefully regulated by legislation. And so, although midwives are universally employed, Sweden, for instance, shows the loss of but one mother for every 430 babies born alive, while the United States loses one for every 150, and North Carolina one for every 127.

The State Board of Health is awake to the situation and is calling for the co-operation of health officers, physi-

cians, nurses, registrars and all who will enlist in this crusade to remove the hazards of motherhood.

Four things are required of midwives by State law: Registration, use of silver nitrate solution, reporting of cases of ophthalmia neonatorum, reporting of births. Some of the county health departments also require registration and in a few instances are undertaking instruction and supervision, which is highly desirable since for obvious reasons the county can enforce a higher standard for the practice of midwifery than a state agency can.

The county nurses are especially valuable for making the personal contract and demonstration of nursing technique so necessary to success in teaching midwives. In 25 counties of the State this instruction is going on, the nurses following a syllabus prepared and outlined by the Bureau of Public Health Nursing and Infant Hygiene.

In an effort to improve conditions in the counties as yet unreached by official health agencies the Bureau of Public Health Nursing suggested a series of conferences and offered the services of a nurse to try out the plan in co-operation with the Bureau of Epidemiology under which the midwives are registered. Letters are sent out in advance calling them to a meeting, specifying place, date and hour. After a few conferences it was evident we were on the right track, for the women were eager to learn and so grateful for instruction that the two to four hour lesson with rest periods as needed seemed all too short.

Since November, 1920, 73 such conferences have been held in 52 counties, with a total attendance of 889 midwives, 106 of whom were white, two of them men, 97 of these were ignorant of the use of silver nitrate, and 36 had never reported a birth.

The meetings are usually held at the court house, sometimes at the depot, a school house, a church, or a doctor's office. Enrollment blanks are filled out for those present and names of others secured. In this way many have been located who were unknown to any official agency. In Mecklen-

burg alone nine were found who, with a record of from two to twenty-five years' practice, had never reported a birth.

In opening the meeting it is necessary to explain its purpose as the vaguest ideas prevail regarding it, in spite of the clear statements sent out in the notification letters. We take up in detail the laws relating to the practice of midwifery in this State and the reasons for same, then the mental attitude and qualifications, character, physical fitness and habits desirable in midwives. Their status and relation to physicians needs defining especially in the "black belt," and every effort is made to inculcate in them a feeling of regard and respect for his opinion and advice, and to look upon him as their friend and counsellor.

They are told of the value of prenatal instruction and asked to report expectant mothers to the Bureau of Public Health Nursing for the series of advisory letters.

Some of the ailments of pregnancy and indication of abnormal conditions are pointed out so that they may wisely advise as to reporting danger signals to a physician, testing of urine, etc. If time permits they are told what instruction they may give in regard to hygiene, diet, care of the breasts, preparation for confinement, and so on.

The midwife's own preparation for a case, her bag and supplies, her garments, cleaning of room, preparing hot, boiled water (hot and cold) and lysol solution, and scrubbing of the patient for delivery are discussed and demonstrated as simply and freely as possible. At this point in the lesson, if a physician can be secured he is asked to instruct them in the conduct of labor.

Some of the complications of labor are brought up as instances of when to call a doctor—such as ante-partum hemorrhage, too hard or too long labor, breech or cord presentation, patient weak, pale, or chilly, delay in twin births, severe headache, blindness, convulsions. Also some that may arise later as post-partum hemorrhage, stoppage of flow, chill, rise of temperature, red and swollen

breasts. They are told what to do while waiting for the doctor.

As much of nursing technique as is possible is given concerning the care of the baby. Throughout the lesson the points most emphasized are these:

1. The State laws.
2. Responsibility of the midwife.
3. Danger of vaginal examinations.
4. Necessity for absolute cleanliness.
5. Obligation to call for medical aid.
6. Prevention of eclampsia.
7. Protection of the baby from infection of eyes and cord.

The great task now confronting us is to devise ways and means to supervise and train this body of women,

discourage their employment where medical advice is adequate, eliminate the unfit, and bring speedy relief to our long neglected mountain mothers, countless numbers of whom are denied either medical or midwife service.

Establishing training centers as has recently been done in Charleston, and enlarging and amplifying the plan now in operation or under consideration.

The greatest gift in the power of preventive medicine to bestow has too long been withheld. The obligation bears heavily upon us, no less than upon those who "go down to the sea in ships" to observe the rules of Birkenhead and carry on with high endeavor the ideal embodied in that old phrase "women and children first."

## SUGGESTIONS TO MOTHERS ABOUT DEATH DEALING WHOOPING COUGH

By J. S. Mitchener, M.D.

This disease of childhood is most frequently called whooping cough because of the whoop so often heard when there is coughing. It should be spoken of as spasmodic cough, as the cough comes in "spells" or spasms. The name pertussis is the medical term by which it is known.

### What is Whooping Cough?

Whooping cough is a disease which is found mostly among children but it occurs sometimes in the grown folks. It is caused by a definite germ. Usually a typical whoop develops, but the outstanding feature is the occurrence of the cough in "spells" or paroxysms. Signs of the disease usually develop within 21 days after the germ gets "picked up" by a person who has not had the disease. One does not always get the germ when first exposed, but babies are very susceptible. The first attack usually protects one for life.

### Early Signs of Whooping Cough

Since many children never whoop when they cough, you must learn other

points about this fatal disease in order to be able to tell as soon as possible if the child has it.

When whooping cough is known to be in a community and a child who has never had it develops a cough that grows gradually worse, and comes in spells or spasms, that child is most apt to have the disease. The cough is often more intense at night, but not always. The coughing causes the face to become flushed and the eyes, which are more or less inflamed, to run water. There is often vomiting. This makes the mother fear her child has indigestion. The whoop comes, but quite often not until two or more weeks have passed.

SO IF A CHILD HAS A COUGH WHICH GROWS WORSE, COMES IN SPELLS, ITS EYES ARE RED AND WATERY AND THERE IS VOMITING, DON'T WAIT. OBEY THE LAW. NOTIFY THE COUNTY QUARANTINE OFFICER.

The proper thing to do is to report a suspected case and warn the public

that whooping cough is at your home. Thus, responsibility is lifted from your shoulders. If you do not do this, a neighbor may bring her tiny baby to your home and cause it to catch the disease. Death may result and you are to blame. If you find that your child does not have whooping cough, the quarantine may be lifted. Report early. Save yourself criticism and a possibility of punishment by law. This spirit will keep many cheerful babies at home and will prevent as many funeral marches.

### Don't's About Whooping Cough

There are two "don'ts" that must govern you if you suspect whooping cough. The first and important one is **DON'T WAIT FOR THE WHOOP**. The law requires the reporting of spasmodic coughs because all cases of whooping cough occur in spasms or spells—if only three or four in 24 hours. The other is **DO NOT EXPECT A DOCTOR MAKING AN EXAMINATION TO TELL IF THE CHILD HAS WHOOPING COUGH**. Usually the cough is worse after the child runs, and at times he may be made to whoop by slightly gagging him on examination of the throat. Sometimes such an examination will tell, but by no means in every case. A conscientious mother can give information which helps doctors decide on the presence of whooping cough. We have learned not to wait for tuberculosis germs to be found in the sputum before telling a person if he has tuberculosis. So with the careful, truthful, and intelligent answering of proper questions, we need not depend upon the whoop to tell about a baby having whooping cough.

### How Do You Get Whooping Cough?

As already stated, whooping cough is caused by a definite germ. Where or how do babies get this germ? This is of interest to all. There is but one place where the germs of whooping cough come from—someone who has had the disease. We people are great traders among ourselves. We exchange, not only the things which save life and make one more comfortable, but also the things that take life and that afflict one for all his days. In the exchanging of spittle,

we pass on to others whooping cough, tuberculosis, diphtheria, scarlet fever, measles, etc.

We see where the germs come from—now how do we get them? The secretions from the nose and throat of those who have whooping cough, especially in the early stages, are rich in these germs. In coughing and sneezing fine particles of spray are sent out by one person and breathed in by another. People are always picking their noses and putting their fingers on various articles which children carry to their mouths. By hand shaking, handling the same things, etc., the secretions travel from one to another. Chewing the same gum, biting the same apple, using the same pencil, drinking from the same cup, blowing on the same handkerchief, kissing, all play a part in the game of life against death.

### Times of Greatest Danger

The time of greatest danger from any disease is in the early stages. A child should be under strict regulations for two reasons. One is that the first or acute stage, is the time when the germs are thrown off more extensively and any other child is more likely to catch the disease from the discharges. The other reason is that exposure in this same period will often bring on complications which cause death.

The younger the child, the greater the dangers are of death. Study this table carefully:

Under 1 year old—1 in every 8 having whooping cough died.

From 1 to 2 years old—1 in every 10 having whooping cough died.

From 2 to 3 years old—1 in every 30 having whooping cough died.

From 3 to 4 years old—1 in every 50 having whooping cough died.

From 4 to 5 years old—1 in every 200 having whooping cough died.

In 1918 there were 775 deaths from whooping cough.

Thus the times of greatest danger are in the early years of life, and the early stages of the disease.

### Suggestions on Prevention

To prevent whooping cough, we must keep the baby from getting the spittle which has the germs in it.

This is a difficult thing to do, but many careful mothers who have observed the precautions suggested say it is possible to accomplish much by following them. The effort is worth while and if the child can be raised to be five years of age whooping cough rarely results in death.

#### **Children Should Not Be Exposed Knowingly to Whooping Cough**

Unfortunately, there are mothers who believe that at the same time the Lord gave her the baby, He gave the baby the right to have whooping cough. Often this mother wilfully takes her baby a few months old where another child has whooping cough. And yet we speak of mother's love. Many mothers really carry their children to the grave in this way. Ignorance is no excuse of the law. A man who defies the law is likely to suffer. These two ideas apply to preventing diseases.

#### **Suggestions to Prevent Whooping Cough**

(1) Keep every child under three years of age from other children as much as possible.

(2) When whooping cough is in the community, keep the child at home.

(3) Allow no fondling of the baby by others. A kiss may be a death blow.

(4) In feeding the baby, use nipples, cups, spoons, etc., that are used by no other person unless thoroughly cleansed.

(5) Do not put food you have been chewing into the child's mouth. What a child cannot chew itself, it does not need.

(6) Let no fingers, no handkerchief or any other article used by any person, etc., be put on the child's mouth.

(7) Make your baby a "Fresh Air and Clean Food Baby."

(8) Don't stuff your baby. Too much food is "against" a child and they cannot resist whooping cough and other diseases so well.

(9) There is a vaccine to prevent whooping cough. It is advised by good health authorities. Just how long a time it protects against whooping cough, is not known. The opinion

at present is that a good percentage of children who take the vaccine are protected from the disease. Anyway many doctors think the disease will be milder. Only very fresh vaccine should be used.

#### **Suggestions on Treating Whooping Cough**

The essentials in treating whooping cough are breathing fresh air, eating less food and avoiding constipation. These assist in preventing pneumonia, which often complicates whooping cough. If begun early, the whooping cough vaccine very often makes the disease run a milder course. This should be given, especially to young infants.

If your child is very young, and has had spells of coughing that cause him to strain, your doctor should be consulted. Watch for signs of fever, as this almost always tells that pneumonia is beginning.

#### **Points on Care of a Child Sick with Whooping Cough**

(1) Follow the doctor's advice.

(2) Watch the baby carefully.

(3) Take care of the child, so as not to expose it.

(4) Keep the sick child separated from the others, especially little babies.

(5) The cough and sneeze should be covered up as much as possible.

(6) All handkerchiefs, cups, eating utensils, etc., used by a child with whooping cough should not be used by any other until thoroughly boiled.

(7) Any child that has had whooping cough is more liable to tuberculosis.

(8) When a child remains weak after having this disease and does not regain its strength, tuberculosis should be suspected. A careful examination may tell you it has that disease.

A careful physical examination at regular intervals is the best safety device to protect your life from tuberculosis.

#### **Explanation of Rules Governing Whooping Cough**

(1) Reports of all cases or suspected cases of whooping cough

must be made to the quarantine officer. This applies also to reporting cases that develop after the house is placarded.

(2) Homes where whooping cough exists must be placarded and if this placard is removed in any way the householder must have another one put up.

(3) No child who has whooping cough or who has not had the dis-

ease but has been exposed to it is permitted to leave the house and yard unless it goes driving (not in a baby carriage) so as to get fresh air. Then no stops can be made. Thus they can not play on street, go to school, picture shows, etc.

It is quite hard to keep an active boy in the yard but parents should do their best as they would want others to do to protect their children.

## THE DIRTY HABIT OF SPITTING

By R. B. Wilson

By "spit" we mean the excretions that are expelled from the mouth and nose in the act of spitting, coughing or sneezing. This dangerous and dirty habit of careless coughing and sneezing or spitting about promiscuously is without doubt the most costly carelessness that civilized society indulges in. The saying "No spit no consumption" is literally true, and this means that the consumption we have, with 150,000 deaths a year, would be avoided if this habit could be abolished. Think of the cost, 150,000 deaths, 1,000,000 new cases of consumption, or, if we capitalize the lives lost in a year from this habit, the cost of spitting amounts to something like \$500,000,000 a year. This sounds like an exaggeration, but the statement will withstand scientific scrutiny.

**How Far Can One Spit.**—It has been shown by carefully conducted scientific experiment that in the act of coughing or sneezing, unless a handkerchief or other object is held in front of the nose and mouth, microscopic particles of saliva and nasal secretion are discharged into the air which, even in a quiet room without noticeable air currents, may be carried a distance of from ten to fifty yards from the place where they were expelled. Many of these droplets can be seen if one will cough or sneeze in front of a mirror or

windowpane. Most of them, however, are too small to be visible to the naked eye. These small microscopic droplets will remain suspended in the air for as long as six hours at a time. One can now readily understand how very impolite it is to cough or sneeze without holding a handkerchief in front of his face, for such a person spits on objects and people, perhaps on food, within a distance of from ten to fifty yards about him.

**What Spit Carries.**—The germs of tuberculosis or consumption, diphtheria and grip, and perhaps pneumonia, whooping cough, measles and scarlet fever, are conveyed through the expectoration. If many perfectly healthy people not suffering from disease carry the germs of pneumonia and diphtheria in their throats and expectorate them, it becomes important that not only recognizably sick people shall desist from spitting, but that the apparently well, who may be "germ carriers" should also be careful in expectorating at the right time and place and manner.

**Great Ignorance Regarding This Common Habit.**—Some time ago a respectable looking gentleman stopped at a nice hotel, and sitting in the lobby began to bespatter the nice, clean, marble floor with tobacco extract. There were a number of clean, nice looking spittoons sitting all around, one directly in front of

the gentleman referred to, but he never hit the spittoon, but invariably spat on the floor by the side of it. One of the porters in the hotel moved the spittoon so that it would be more convenient, and the man began spitting on the other side of the receptacle. The porter then moved it again to the part of the floor under fire, whereupon the spitter informed the porter that if he did not stop moving that nice vessel around he would spit in it. There are many people like this gentleman, who do not know the use of spittoons. Some time ago I was standing behind a well known lawyer at the ticket window in a railroad station in one of our largest cities. While waiting for my ticket I noticed in big letters the almost ubiquitous "Don't Spit! Penalty \$5.00" in a conspicuous place on the wall of the station. I also noticed within a few feet of where I was standing a large expectoration mark on the floor. I slapped my legal friend on the back and started to point to the law on the wall and its violation on the floor, but before the lawyer could look up he had placed a second violation beside the one already on the floor. The anti-spitting ordinances in most places are regarded and treated as jokes. We must have more

education in regard to the pernicious influence of this filthy habit, and create a public sentiment so that a person will be just as much ashamed to be seen spitting on the street as to appear on the street improperly dressed.

**The Regulation of Spitting.**— Towns and cities should not enact an anti-spitting ordinance until they are ready to enforce it. To enact a law and not to enforce it, but permit a total disregard for it, has the same effect on citizenship as the commands of parents to children that are never enforced. The child soon learns that it can do as it pleases, and that the demand of the parent means nothing. In the same way an unenforced ordinance or law has the effect of creating civic disrespect for all laws and ordinances. A spitting ordinance should have only a small fine attached to it. If the fine is too large the police justice will be tempted to remit it. A fine of from twenty-five to fifty cents is probably large enough.

One more point—no anti-spitting ordinance should be adopted until public buildings and other places where people who have to spit are properly supplied with receptacles for their use.

## THE AUTOBIOGRAPHY OF A DEATH CERTIFICATE

By F. M. Register, M.D.

My twin sister Birth Certificate sometime ago wrote her autobiography. While my sister Birth Certificate is of a happy, golden and joyous disposition and is only found where there is great rejoicing. I am always pale and sad, I only go into homes of mourning and weeping. Sometimes I closely follow my sister Birth Certificate, because some dread disease like diphtheria, ileo colitis or whooping cough is carelessly let into the home and takes away the little infant over the arrival of whom, just

a few months before, there was such rejoicing. We certificates are sent out by the Bureau of Vital Statistics, Raleigh, N. C., in pads of 100 to undertakers and coffin dealers. I notice I am only ten from the top and rejoice that I will not have long to wait before I am returned to Raleigh—for I am sure I will see nothing but sorrow from the time I reach the undertakers till I am returned to Raleigh. I am sent to an undertaker in the mountains.

As I lie snugly in the undertaker's

drawer, I begin to muse over the tragedies and heartaches of life. How careless we are over the two most precious things we have, viz., life and health. Just yesterday one of my brother certificates was used to record the death of a young man who was killed in an automobile accident. I caught from the man who purchased the coffin the one word "Speeding." I heard the undertaker say there were 161 killed in North Carolina last year from automobile accidents. How glad I was that I was not used to record the death that could have been prevented. We certificates have real feelings even if we are only paper. Only a few days before another brother of mine was used to record the death of a man who died of typhoid fever. I heard the man who came for the casket say, "What a pity John did not take typhoid vaccine, 'he said he was too busy' now he is dead and his wife and children need him so badly.

It is morning again. The sun is just peeping in the window. I hear many footsteps. I fear it is going to be a busy day. Oh! they are getting down two little caskets, one for a little child burned to death, caught fire by going too near an open fire. The man who came for the casket, said, "I had advised the mother, just a few days ago, to get a screen for the fire place, as there were 281 people in North Carolina burned to death last year." The other casket was for a little child who died of diphtheria. I heard someone say, "Its parents waited too long before sending for the doctor, the little darling just choked to death. If they had just sent for the doctor early the child would be living now and it would have cost just for one visit probably and 25 cents for the antitoxin—which is made by the State Laboratory of Hygiene.

About this time a young doctor entered who said, "It is mighty fine that the State Board of Health has been putting out antitoxin at 25 cents a dose to cure diphtheria, but they have something better than that now, it is called the toxin-antitoxin and is given like typhoid vaccine and prevents diphtheria. If given to all

children it would have prevented the 286 deaths that occurred last year in North Carolina from diphtheria."

I hear halting footsteps, an old man has come to purchase a coffin for his little grand-child who died from swallowing lye that its mother carelessly left where the little child got it and swallowed it, dying a few hours later in great agony. Why will people be so careless and leave poisonous substance lying around?

A few hours later I heard the undertaker say, "This is most unusual, this is the first casket I ever sold for this purpose, why I thought everybody in this town was vaccinated against smallpox." The purchaser of the casket said, "Jim was the only man I knew in this town who was not vaccinated against smallpox. He did not believe in vaccination. He worked in the railroad freight yards and some days ago he helped remove a tramp from a freight car—afterwards the tramp broke out with smallpox and a little later Jim came down with the same disease, the children escaped because they had been vaccinated before they entered school, and his wife had been vaccinated before Jim married her."

There are only two more certificates before they come to me. Morning again—The undertaker is giving directions to have two caskets shipped to a nearby town. He will not act as undertaker in these cases, but is putting one of my brother certificates in each casket as the law directs when a casket is sold and is instructing the purchaser how to fill in the certificate. I am glad I do not know the causes of death of these people. My feelings have been harrowed enough already, but wait, I am left, and will soon be used. I do hope I will not be used as a death certificate for an accident, murder, suicide or some preventable disease. I am sure you must feel so out of place acting in this capacity. I heard the undertaker say last night that old Mrs. Goodwill was about to pass away from valvular disease of the heart the doctor said. To be the death certificate of some one who has lived a useful life and passed the three score and ten years and who ap-



proaches the grave "Like one who wraps the drapery of his couch about him, and lies down to pleasant dreams"; to be the certificate for one like this is not so bad—in fact I shall consider it quite an honor.

"Night—candles are burned and jocund days stand tip-toe on the misty mountain top." The rising sun dispels the mist in the valley. I hear the undertaker returning to his shop, with a firm, satisfied tread, which tells me that his prediction of yesterday has come true. Yes I am to be the death certificate of Mrs. Goodwill. I am all in a flutter. I am so anxious to get back to Raleigh again to be placed among my brother and sister certificates, never to go out again.

A grand-son is filling out the family history for Mrs. Goodwill and now I am carried to the family physician across the way to have the medical part filled out. The doctor writes a beautiful hand and wonder of wonders, you can really read his signature. The good writing and the black ink used, suits my white complexion so much, that the local registrar to whom I am carried, exclaims "What a beautiful, neat certificate." I am exchanged for a burial permit as the law requires—I am copied in a book by the local registrar and on the 5th of the month, along with a lot of other birth and death certificates I am sent back to Raleigh—where we shall be bound in a book and laid away in the vault for future generations.

I am back in Raleigh, I feel much elated to be back again, bearing the life message of this wonderful old lady, born 85 years ago of parents who have long since slumbered in the dust, born before the days of telephone, telegraph, flying machines, railroads, steamboats, submarines, automobiles, before registration of births and deaths began in North Carolina and hundreds of things were known which are so common and useful to-day. As far as authoritative records go I am the first messenger of the Goodwill family. From now on births and deaths of all the descendants of my dear old lady will be recorded, and children's children can trace a line unbroken back to me.

How proud and important I will feel when 300 years from now some active clerk will brush aside the dust and signs of time that have accumulated on me, will see plainly written in unfailling ink, Betsy Goodwill, daughter of John Goodwill and Betsy Ross born January 1, 1936—died January 1, 1921. When my brother certificates become restless and grumble about being put away and not used, I say to them your day will come—for "They also serve who stand and wait."

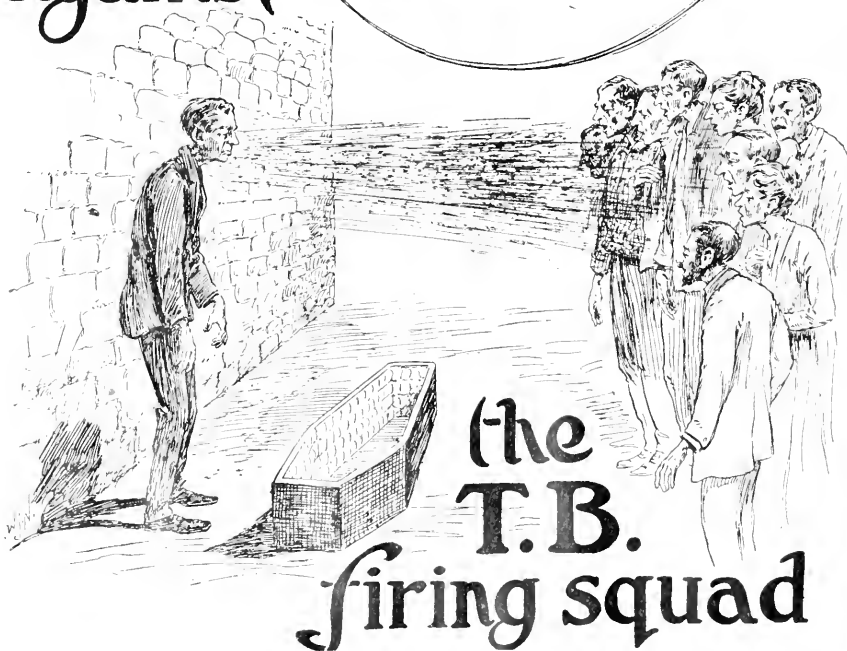
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# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

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## VITAL FACTS ABOUT CANCER

During the Great War the United States lost about 80,000 soldiers. During the same two years 180,000 people died of cancer in this country. Cancer is now killing one out of every ten persons over forty years of age.

In North Carolina last year there were 964 deaths from this cause. Of these 717 were of white people, 247 of colored people. Many of these deaths were preventable, since cancer is frequently curable, if recognized and properly treated in its early stages.

Cancer begins as a small local growth which can often be entirely removed by competent surgical treatment, or, in certain external forms, by using radium, X-ray or other methods.

Cancer is not a constitutional or "blood" disease. It is not a communicable disease. It is not possible to "catch" cancer from one who has it. It is not inherited.

The North Carolina State Board of Health believes that the nearly one thousand deaths now occurring annually from this cause in North Carolina can be very greatly reduced if the people generally have proper information with regard to this disease. This issue of The Health Bulletin is therefore devoted to this subject, the material having been prepared by a special committee of the American Society for the Control of Cancer.

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## FREE HEALTH LITERATURE

The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in.

WHOOPIING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
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ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES  
CATARRH

## FOR EXPECTANT MOTHERS

Rose M. Ehrenfeld, R.N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend send name to the State Board of Health, and give approximate date of expected confinement.

## THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for *The Bulletin* each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.

## WHAT EVERYONE SHOULD KNOW ABOUT CANCER

Why has there been so much talk about cancer of late years? There are several reasons. The disease is very frequent, causing one death out of every ten after the age of 40, and moreover, it is apparently steadily increasing throughout the world. Familiar to the earliest physicians, it has persisted through the ages of medical progress; but while an immense fund of knowledge has been accumulated there is much still to be learned. Only too often the utmost skill of modern medical science fails to save the patient, and people have therefore come to dread it as a hopeless and incurable affliction. Fortunately the facts warrant a more hopeful view and a systematic effort is now being made to tell people generally what is known about cancer, and particularly to describe the warning signs so that this insidious disease may be more frequently discovered and successfully treated in the early stages while a cure is still possible.

In the two years and a half that the United States was engaged in the great war about 80,000 soldiers were killed or died of disease. During the same time cancer caused the death of 180,000 people in this country. While these soldiers who made the supreme sacrifice did not die in vain, a large proportion of the deaths from cancer represents a needless waste of human life.

### THE FREQUENCY AND THE INCREASE OF CANCER

Cancer is indeed one of the most important causes of death. In the continental United States the annual mor-

tality from all forms of the disease is estimated at about 90,000. It is probable that if all these deaths were correctly ascertained and certified, the total would reach 100,000 for the year 1920. The mortality rate for cancer is somewhat below 85 per 100,000 per annum. As a group of diseases, cancer ranks with pneumonia, tuberculosis, and kidney disease as one of the five or six causes of death which stand second only to heart disease in the Census Bureau's annual report for 1917.

The mortality from cancer is apparently on the increase throughout all civilized countries. In the United States the annual increase in the cancer death rate is approximately  $2\frac{1}{2}$  per cent. It is almost exclusively a disease of adult life, for of the total number of deaths from cancer at all ages, about 95 per cent occur after the age of 35 is reached.

Cancer appears in a variety of forms, affecting practically every organ or part of the body. The most important forms for both sexes is cancer of the stomach, which, including the liver, accounts for about 35,000 deaths per annum. The number of deaths from cancer of the female generative organs is about 13,000 per annum; from cancer of the female breast about 8,500 (a very high frequency, for it occurs in only half the population): from cancer of the mouth and tongue about 3,500, from cancer of the peritoneum, intestines and rectum combined about 12,000, from cancer of the skin about 3,500, and from cancer of other organs or parts about 14,500.

Cancer is especially frequent among adult women. Of all deaths over the age of 40 one in thirteen among men is due to this disease, but among women over this age one out of every eight is fatally attacked. Between the ages of 35 and 45 three times as many women as men die of cancer; between 45 and 55 twice as many. This excessive mortality among women is apparently due to cancer of the breast and the special organs of generation. Yet these forms of the disease like others are usually curable by competent treatment in the early stages.

Excluding cancer of the breast and of the female generative organs the relative frequency of all other forms of cancer combined is about the same in the two sexes. The civilized and particularly the white races are more liable to cancer than native races, such as the North American Indians or the Orientals. Cancer of the uterus, however, is apparently more common among negro women in this country than among white women. Cancer of the breast and cancer of the ovary are more frequent among the unmarried than among the married; in contrast, cancer of the uterus is more common among married than among single women.

### THE NEED FOR EDUCATING THE PUBLIC

But, quite aside from statistics, the disease occurs so frequently that there is hardly a person who has not known of its occurrence among his or her immediate relatives or friends. Another reason for interest in the subject of cancer is that after the disease reaches a certain stage it is incurable and invariably fatal. It is important to remember, however, that if it is discovered in an earlier stage, the cancer can be removed with a very great probability of a permanent cure. This fact does not seem to be generally recognized, and it is for this reason that physicians, health officers and others who are interested in public health and welfare work are so anxious to show that much more than is being accom-

plished at present can be done to cure cancer in its early stages. Even though scientific knowledge of the origin of cancer is still in many points imperfect, the practical knowledge of how to arrest its onset and save the patient in individual cases is already in many respects satisfactory. Some physicians believe that possibly three-quarters of the deaths from cancer and all the attendant suffering could be prevented if all members of the medical and nursing professions as well as the public were adequately instructed in what they each ought to know about this disease.

The campaign of education in regard to tuberculosis which has been conducted for the last twenty years in America has resulted in a very great diminution in the number of deaths from this disease, largely because people have been taught not to delay in consulting a physician. It is perfectly possible to produce the same results in cancer, if all patients suffering from the disease could be taken to a physician and could have the cancer removed while still in an early stage. Practically without exception cancer is at first a local disease; that is, it begins in a little spot all by itself and for a long time may have no effect on the rest of the body. This means that in theory it would always be easily curable if the first spot could be recognized and removed in time. In practice it is difficult and in some cases impossible for even the physician to recognize it soon enough. The second practical difficulty is to get the patient to consult a physician immediately after he or she recognizes that something is wrong. If all cases that came to treatment were early cases a great many more patients would be cured. The problem, then, is to get the case into the hands of a competent medical adviser while it is still in the early and curable stage, or even more fortunately, while the patient exhibits merely those conditions which are now widely recognized as predisposing factors in the causation of cancer. No matter how great his skill or how modern his knowledge

the physician cannot help a patient who does not come to him. People must therefore be taught to recognize the disease when it begins and to realize that early surgical removal, or the application of other modern remedies which are sometimes useful in competent hands, is the only hope of cure but that the chance for cure is very great if the patient is wise enough to act promptly.

### WHY DO PEOPLE DELAY GOING TO THE PHYSICIAN

Unfortunately, statistics prove that the average cancer patient after discovering something wrong, waits weeks, months, even a year or more before obtaining medical advice or treatment. Why is this? Probably one reason is that the patients do not realize that cancer starts from such trifling beginnings, or if they do have a suspicion that they may have cancer, they ignore or conceal it either through fatalistic despair or false and fatal modesty. The old-fashioned idea that cancer is a "blood disease" still exerts a wide and baleful influence and must be overcome by spreading the modern knowledge that practically all forms of malignant growths are at first confined strictly to the locality in which they originate. The thought that cancer may be hereditary also makes one infected with this disease desire to conceal it, but heredity has not been proved to be an important factor in the development of the common types of cancer.

Above all causes of delay is the unfortunate absence of pain in the beginning. Usually there is no pain to force attention while there is still time enough to apply the remedy, and by the time the symptoms are so marked as to alarm the victim it may be too late, for the invading cancer will probably have obtained a foothold from which it cannot easily be dislodged. If indeed the early symptoms of cancer caused half as much trouble as a toothache many more lives would be saved be-

cause the patient would be driven to consult a physician in time. The fact that people generally are not familiar with the symptoms of cancer, other than pain, makes it difficult to increase the number of cures, for unless prepared to recognize the signs that mark the beginning of cancer people are helplessly open to its ravages. A little knowledge in this case is not dangerous; it is essential. It is the purpose of this handbook to give the essential facts that should be familiar to everyone.

### HOW CANCER BEGINS

Cancer is a very curious disease which is due to the running wild of certain parts of the body tissue; for example, a few cells\* in the breast or in the liver or in some other organ grow beyond the natural limit and invade the surrounding tissues; then we have a cancer. This cancer often does not give any notice of its presence until a long time after the trouble has begun, because the cells composing it are the same, or nearly the same, as the cells from which they started, and therefore, the body does not recognize the fact that a cancer is growing until it becomes of considerable size. The origin of cancer has been aptly compared to the situation in a family seated at a dinner table when a supposed relative arrives and is given a place—the newcomer eating all the food and finally the family itself. This is just what a cancer does. It starts very quietly, is very small at first, but gradually grows and destroys the very tissues that feed it, until ultimately it kills its host by the destruction of some important part of the body. But in such a case, the cells of the body itself are the parasites, there being no external parasite, so far as we know, introduced from the outside to cause the cancer.

### CANCER NOT A GERM DISEASE

Considering that cancer is such a formidable disease, it is satisfying to know that certain fears about it are

\* The body is made up of these small elements called cells, which when packed together form the organs of the body. The cells are different for each organ; those of which the skin are composed are entirely unlike those which make the liver or brain.

unnecessary. In the first place it is quite unlike diseases due to germs, of which so much has been learned in the last thirty years, for no germ which is capable of causing cancer in human beings or in animals has been found.

### CANCER NOT CONTAGIOUS

Cancer is, therefore, not contagious, and there is no danger in treating or in dressing a case. Ordinary cleanliness, however, requires that the soiled dressing or the discharges from a patient suffering from cancer shall be carefully collected and disinfected and the dressings burned—not because there is any danger of becoming infected with cancer, but because the discharges and dressings contain germs such as those which cause boils, erysipelas, and other skin inflammations.

As cancer is not contagious there is no reason to believe the stories so often told of "cancer houses," "cancer villages," or "cancer belts." The occurrence year after year of a large number of cases of cancer in a single house can usually be shown to be due to the fact that the house has been occupied by old people; since cancer is a disease of old age there will naturally be more cases of the disease in such a house than in one which has been occupied by younger people. Thus also, "cancer villages" will usually be found to be small country villages from which most of the young people have gone to the large neighboring manufacturing towns in order to obtain work, so that only the older people have been left. As these old people are very much more likely to develop cancer, there is an apparent increase in the number of cases in the village. This has been shown to be true in some of the New England states, especially Vermont and New Hampshire. Hence, these two states have the highest cancer rate of any in the country, while the western states, which are largely populated by younger persons, have a very low cancer rate. While, therefore, the general percentage of cancer in these New England states is increased, it will be found on examining the statistics that

there is no increase in the number of cases which have occurred at the age say of 60, over the number which would usually occur at the same age in the general population of the whole country elsewhere.

In a word, the possibility of transferring cancer from one person to another by direct contact should be practically disregarded. In all the thousands of recorded operations for cancer there is no report of a case acquired from a patient by any surgeon or nurse. Cruel neglect of some patients has been known to occur because of groundless fear of "catching" the disease. This is doubly unfortunate since cancer in the incurable stages calls for the most patient and devoted care of the sufferer.

### CANCER NOT HEREDITARY

Cancer is not hereditary, although much has been said and written about experiments with certain strains of white mice which showed that by inbreeding the occurrence of cancer in these animals was much increased. While there is no question that this is a fact, yet the increase can be obtained only in certain strains of white mice, not in all varieties, and has never been observed in white rats, guinea-pigs, rabbits, dogs, or other animals in which cancer occurs. The breeding conditions of the strains of mice above mentioned, about which so much has been printed in the newspapers, are so different from those which occur in the human race that no comparison is possible. Among the mice kept under observation, every parent either had cancer or came from a cancerous ancestor, and this is manifestly impossible in the human race. Therefore, there is no reason to worry because one member of a family has suffered from the disease. It does not at all follow that any other member of the family will have it. It has been shown, in fact, that according to the laws of chance if a certain number of cases of cancer are to be expected in a community, one family will naturally have two or three cases while other families will



have none—and this is due purely to coincidence. In a family the members of which tend to be very longlived, more cases of cancer will occur than in one in which the members die young: this is not because cancer is hereditary, but because it is predominantly a disease of middle and later life.

Even those students of heredity who hold the strongest views on the subject do not believe that cancer itself is inherited, but merely that a liability to the disease is passed on. While everyone should know the symptoms of this disease, people who have had much cancer in their families should take particular pains to inform themselves carefully about the disease and its prevention.

It is reassuring also to remember that life insurance companies pay no attention to a history of "cancer in the family" in determining whether or not a person is a good risk. Indeed, exceptionally careful studies of life insurance records have shown that there is no ground for apprehension even if both parents died of cancer.

#### **NOT ALL FORMS OF CANCER ARE INCREASING IN FREQUENCY**

Even the statistics showing the increase of cancer must be considered in the light of all the facts and should not be seized upon as an occasion for extravagant and alarming statements. While the improvement in conditions of living has prolonged life ten years on an average, during the last century, this added length of life apparently increased the number of cases of cancer, since there are more people who reach the cancer age than formerly. This gives more cases of cancer in the population as a whole, though the relative proportion per age group may not be increased. Statistics show that there has been but little increase, for example, in cases of cancer of the skin, while the occurrence of cancer of the internal organs has apparently become much more frequent. This latter observation may be due in part to the fact that internal cancer is now more easily diagnosed, owing to the use of

chemical tests and of the x-ray which frequently reveal unsuspected cancer from which the patient might otherwise have died before the disease was discovered, and in part, also, to the frequency of operations which reveal cancers of which we could not otherwise be certain.

#### **PREDISPOSING CONDITIONS**

When we state that we do not know the cause of cancer we mean that we do not yet know just what causes a small cell or group of cells to change their nature and take on the extraordinary power of growth which is the fundamental characteristic of this disease. But nevertheless a great deal is known about the circumstances concerning these new growths: when and where they take place and what conditions seem to favor the process. In other words, even though we do not know the cause of cancer, we do know a good deal about how it occurs and what is apt to precede it. For instance, cancer frequently begins in moles or pigmented warts which are irritated by the clothes or are made to bleed and are kept sore by repeated injury of any sort. Such pigmented warts and moles are perfectly harmless at first, and become dangerous only after they have been irritated in some way for a long time, especially if the person is of the cancer age: that is, above 45. It is wise, therefore, to have such moles or warts removed if located so that they are liable to be rubbed or injured. It has also been found that cancer frequently develops in the scar of an old burn, or in places where there is a chronic ulcer, as on the lip, tongue or leg, and care should be taken to see that such ulcers are healed as quickly as possible. Ulcers on the tongue and cheek frequently result from a scratch from a poor filling or from the sharp point of a decayed tooth. A dentist should be consulted if such an ulcer does not heal within a few days, in order that the filling may receive proper attention or the point of the tooth be filed off. Smokers should be particularly careful about any sore on

the lip or tongue. Such sores are commonly found in persons who use a pipe in such a way that the tongue or lips are chronically irritated by the hot stem or who hold cigars in such a manner that the hot smoke continually strikes one spot. For this reason, cancer of the lip and tongue is very common in men, and is almost never seen in women.

All these irritants which have just been mentioned do not of themselves directly cause cancer: they give cancer a chance to begin. If a man past middle life does not smoke heavily, cares for his teeth and keeps his mouth clean, he is very much less likely to have cancer than one who does not follow the simple laws of mouth hygiene. Syphilis also predisposes to cancer of the mouth.

Internal cancer in an early stage is very difficult to determine, because tumors, when they first start, cannot be discovered except by accident. For instance, ulcer of the stomach is sometimes a starting point for cancer, since the ulcer may possibly turn into cancer if not cured by proper medical or surgical treatment. So, too, cancer of the lower bowel is frequently preceded by chronic inflammation. Therefore persons who think they have chronic dysentery, ulceration of the bowel, or bleeding piles, should consult a physician to have these ailments properly diagnosed, and thus make sure that they are not due to beginning cancer.

Any woman who notices a lump in the breast should at once consult a physician. It is very much better to be told that the lump is harmless and need not be removed than to wait too long, only to find that it has already developed into a cancer.

Early cancers of the womb give evidence of their presence by persistent bleeding continuing between the periods. The form of cancer of the womb frequently starts in lacerations, following the birth of a child. Such tears should be carefully attended to by the physician at the time when they can be most easily remedied; that is, shortly after delivery.

Fibroid tumors of the womb very rarely turn into cancer, but should be under the observation of a competent physician.

### SYMPTOMS OF CANCER

Unfortunately the very smallest cancers give no symptoms unless they are on the skin or lip or tongue or elsewhere on the surface of the body, in which situations the earliest diagnoses can be made. Cancers the size of a pea or but little larger are often diagnosed and removed by a surgeon with an assured favorable result, if the operation has been properly done. In the stomach and internal organs, however, the cancer does not give rise to symptoms until it is quite large, and it is important, therefore, for anyone who has any disturbance of the stomach or intestines, loss of weight, or anemia, to go at once to a surgeon, because by modern chemical methods and by the use of the x-ray, a diagnosis can often be made long before the cancer can be felt or seen.

One of the last symptoms of cancer is pain, which is caused by the growth pressing on the nerves as it spreads out through the tissues. When a cancer gives a great deal of pain it is usually beyond operation. Bleeding is a common result of cancer of the intestines and of cancer of the womb, and is one of the most important symptoms.

Every one should know, however, that when a lump appears anywhere on the body, a physician should be seen immediately. The lump may prove to be an abscess or a benign growth for the early symptoms of cancer are not very different from the symptoms caused by harmless tumors. On the other hand, a mere lump may prove to be a cancer, and then, if it has been discovered early enough, it can be cured. Unfortunately, cancer attacks not only those who are in feeble health, but also, and with equal frequency, those who are strong and healthy and have never suffered from any other disease. For this reason, it is especially important that healthy people should consult

a physician if any sudden change in their well-being takes place, and particularly if there is any digestive disturbance or disorder of the bowels, for the stomach and intestines are frequent sites of cancer.

### KINDS OF CANCER

There are many kinds of cancer, and each kind acts differently and spreads in its own way through the body. Certain forms which arise in glands, such as the breast, are called *carcinoma*, and these spread slowly to places where there are small nodules of tissues, called lymph nodes, in which the cancer cells collect, forming there secondary lumps or metastasis, as the physician terms them. The true carcinoma does not often get into the blood vessels, and therefore it remains localized for a very considerable time, so that the surgeon has an opportunity to remove it if the diagnosis is made early.

Another kind of cancer, called by physicians *sarcoma*, frequently spreads to the blood vessels and consequently is much more difficult to cure, because this spreading takes place very early in the course of the disease and the cells are swept all over the body, starting new little tumors where they are deposited.

While cancer grows through the very tissues which surround it, it does not have roots, as the advertising "cancer specialists" state. What are called roots are more frequently blood vessels leading from the cancer, or bits of fibrous tissue; thus when a charlatan assures a patient that he takes a cancer out "by the roots," he talks nonsense.

Some cancers grow very slowly. Certain cancers may remain for ten or twenty years without spreading to any extent and without forming secondary growths elsewhere. Others grow very rapidly and are fatal within a few months. Many cancers remain localized for some time before they really start to spread out in the tissues, and if discovered and cut out during the local stage, the patient can be cured.

In the following pages some of the principal forms of cancer are considered in fuller detail.

### CANCER OF THE BREAST

It is estimated that there are upward of 8,000 deaths in the United States yearly from cancer of the breast, the majority of which are needless and preventable.

This form of cancer more often attacks women over 35, though now and then it is seen in younger women. It is distinctly curable when it is removed early. The chief symptom in the beginning is a lump or thickening anywhere in the breast or a thin discharge from the nipple and dimpling of the skin over the tumor.

No woman who has a lump in her breast, regardless of how small it may be, should fail to go at once to a competent surgeon or physician. It matters not where this lump may be, for cancer may start in any part of the breast or in the nipple itself. A woman should further seek prompt advice on the first appearance of a discharge from the nipple, for, if she waits for the late symptoms—pain, loss of strength and weight, drawing in of the nipple, and increase in size of the lump, the possibility of a successful operation is practically nil.

The early removal of such part of the breast as the surgeon may decide to be wise, is the only safe and curative procedure. A favorable result in these early cases is likely to be a permanent one; delay usually proves fatal. Not all lumps in a woman's breast are cancerous, but only competent surgeons are able to decide on this point. The woman herself never knows. Cancer of the breast is not painful in its early stages, but the early stage is the curative period. A small lump which is not cancerous may change into cancer. Therefore every lump, no matter how small, should be removed. If this were always done a large percentage of cases could be permanently cured.

Here is a typical story of successful treatment, so familiar to the physician

but so often concealed from friends and from the public:

A woman discovered a lump near the nipple of her left breast. It was not sore, it was freely movable and no larger than a pea. This woman went at once to a competent surgeon who immediately performed a suitable operation. The microscope showed the lump to be a beginning cancer. There was no cancer tissue to be found elsewhere, and the growth had not at that time gone beyond the little lump itself. This was fifteen years ago, and the woman has remained cured and in all human probability will stay so.

Contrast this story with the following:

A woman consulted a physician for some trouble in the breast. Examination showed a widespread cancer too far advanced to offer any hope of cure. On inquiry the woman admitted that she had noticed a little lump in the breast two years before. Asked why she did not show it to her physician at that time she replied, "I was afraid it might be a cancer."

*Early operations are without danger to life.*

*Delay results in death. Early recognition and early operation often result in permanent cure.*

### CANCER OF UTERUS

In women, the uterus or womb is, next to the stomach, the most frequent site of the disease. In many ways it is the most dreaded form of this disease, for it attacks almost exclusively wives and mothers, at the most useful period of their lives. We are thus doubly impressed with the importance of controlling this type. A further special interest in cancer of the uterus is due to the mental and physical suffering that is attendant upon cancer in this organ on account of its proximity to the bladder and bowel. It also gives rise to the most distressing and offensive discharges. It is not to be wondered at, therefore, that the present educational movement for the early recognition of cancer began

among those whose lot it was to treat cancer of the womb.

Uterine cancer occurs with greater frequency among women who have had children, so that it is probably true that the injuries and inflammation following childbirth are a causative factor in the disease but we should not exaggerate this point. The fear of cancer should never keep anyone from motherhood. The evidence we have at present, however, justifies us in recommending that women who have deep tears or pronounced irritation about the neck of the uterus should have these conditions corrected and should be kept under observation during the years between 35 and 50.

The first symptom of cancer of the womb is, in the vast majority of cases, an irregular blood-tinged watery discharge. No pain is present nor can any lumps be felt at this time. Of course it can be readily understood that this is a symptom that may also be due to many harmless conditions, especially if it occurs before menstruation has ceased. In women who have passed the period of life usually termed the "menopause" or "change of life," such a blood-tinged discharge is more often due to a beginning cancer. Every woman, however, over thirty-five years of age should consult a physician if there appears an irregular bloody discharge such as described. It is particularly important to have such an examination made if the bleeding follows upon taking a douche or after intercourse. Somewhat later the discharge becomes odorous. A rather free odorous discharge, even in the absence of blood deserves a careful investigation. When, in addition to this, the patient has pain radiating down the legs it is almost always an indication that the cancer has advanced far. *Do not wait for pain.*

To make a positive diagnosis of cancer of the uterus an internal examination by the physician is necessary. It is the only means of ascertaining the truth. The woman who puts off or shuns such an examination because

of a false sense of modesty is taking the most serious risk. Much has already been done to overcome these foolish prejudices, but they are still an important element in preventing the early recognition of this disease.

As in most other forms of cancer the best treatment is the early surgical removal of the organ in which the cancer is located, together with as much surrounding tissue as seems advisable. This is a serious operation and should be done only by those who have had considerable surgical experience, preferably in this particular kind of work. At the present time we know of no other method of permanently curing cancer of the womb. In recent years radium and deep x-ray treatment have been employed with considerable success in uterine cancer, but apparently only in exceptional instances do they give more than temporary relief. They should be given only by those who have made a careful study of the subject and who have the facilities for giving treatment in the proper dosage.

Patients with uterine cancer can be divided into three groups:

- 1 Those who come at the very beginning of their trouble.

- 2 Those who delay three or four months before attending to this matter.

- 3 Those who put off treatment until they experience pain or have a bad discharge for almost a year.

The number of women of the first group can in many cases be permanently cured. Even those in this group who have a return of the disease are usually given several more years of life free from pain or discomfort. In the second group the percentage of women cured is much smaller. In the third group, there are practically no cures and but little temporary relief from suffering and discharge. It largely depends upon the woman herself into which of these three groups her case will fall. If she is on her guard against suspicious symptoms and will not hesitate to undergo one or even several examinations in order that no

important matter may be overlooked, then and *only* then can she have reasonable certainty of cure if afflicted with this disease.

### CANCER OF THE SKIN

Cancer originating in the skin is called epithelioma. Unlike cancers in general, the majority of these cases occur in men—about one-half being located on the face. They most often develop after the age of 40, but may occur much earlier. Like all cancers, epithelioma begins so insidiously that its victim generally finds it impossible to say when he first noticed the little lump or scaling patch that is later found to be cancer. Unfortunately, cancer of the skin is entirely painless and on this account the patient usually pays no attention to it until it becomes a more or less unsightly object.

Most skin cancers start as small, round, or flat-topped, slightly raised spots, which may increase in size very slowly. Sooner or later, sometimes after several years, there will be a scab covering the little growth or part of it. This scab is usually pulled off by a towel or fingernail, or in some other accidental way which will cause bleeding; then a new scab will form on the sore, which perhaps has meanwhile grown somewhat larger. The new scab may again be knocked or pulled off, and so on; the tumor all the while slowly spreading. Sometimes it heals up entirely at one side, while advancing at another. If the growth is located near the eyes, it may damage the lids so as ultimately to affect the sight; if located near the nose—and both these regions are very common locations for epithelioma—the damage done may lead to great deformity even though the patient later goes to the most skillful physician.

Sometimes the cancer shows a tendency to wild or exuberant growth from the start and forms a raised, reddish, cauliflower-like tumor, which anyone at all concerned about his appearance will very soon call to a physician's attention. While most cancers of the

skin spread very slowly, this is not always the case, for sometimes the spread is very rapid, and these rapidly growing neoplasms are particularly dangerous on account of their tendency to spread to the internal organs. Most epitheliomas remain purely skin troubles but at least the possibility of a spread to internal organs is always present and is the principal reason for not neglecting them, even if the local damage and the disfigurement are not sufficient.

Little as we know of the causes of cancer in general, one factor stands out prominently in the production of epitheliomas, for in a large proportion of cases we find that there has been some long-continued source of irritation acting on a particular portion of the skin. This irritation may be due to the frequent injury of a mole by means of a razor in shaving, or by pressure from a corset, or it may be the result of constant picking at a little harmless, scaling, or crusted spot on the skin. The treatment of moles by "beauty doctors," or by the use of electricity or caustics—methods which do not assure the complete removal of the deeper parts of the mole—are responsible for some epitheliomas, because the traces of the original mole left behind are subject to constant irritation from the pull of the scar produced by the treatment. A pigmented mole should be left in peace as long as it shows no sign of growth, or it should be cut out with a knife. The resulting clear scar is usually less disfiguring than the mole and of course the possibility of the malignant development of the mole is forever removed.

In treatment the one guide should be thoroughness of removal. Any method which is capable of removing or destroying the tumor at once may be used. Cutting it out with a knife or a cauterizing blade does this effectively, and in most cases is the best method, but when the epithelioma is located

near the eyelids or near the tip of the nose, the deformity that would be produced by a safe cutting operation may be so great that other methods of treatment should be considered. In such cases many surgeons prefer to use radium or the x-ray, or to employ the methods of scraping and cauterization. These all give excellent results in the hands of experts. The cure of epithelioma of the skin is simple and certain if the case is placed in the hands of a good physician before the growth has spread beyond control.

### CANCER OF THE LIP

Cancer of the lip occurs frequently in men, and occasionally in women. It most always appears on the *lower* lip in both men and women; indeed cancer of the upper lip may be considered exceedingly rare, unless it be a direct extension from a far advanced lower lip growth.

This type of cancer may develop at any time after the age of 30, but it more frequently develops after 40. It appears in many instances at a point which is subjected to continual irritation, such as from a rough or hot pipe stem or from hot cigar smoke or more often from a broken or decayed tooth. It is now known, however, that many non-smokers may develop this type of cancer, and of course many who smoke for years never develop it at all.

Cancer of the lower lip almost always begins as a small painless surface sore, much like the familiar cold sore, but often accompanied by even less discomfort. A tiny crack or scaly patch on the lip soon covers itself with a thin crust which in a few days falls off, but in the case of cancer instead of leaving behind a new thin, smooth mucous membrane, the small crack still remains. It does not discharge or bleed, and another crust forms, which in turn separates or may be pushed off by the tongue, still leaving a small raw uncovered spot behind. Up to this point, the process has taken perhaps a month,

and from this time on the cycle is repeated over and over again, except that gradually the raw spot becomes larger, the edges a little firmer, and a trace of blood appears—a condition much like what is commonly called “proud flesh.” If still allowed to continue untreated, the ulcer becomes large, may extend down below the red lip margin, and may start secondary growth as shown by a small lump or node under the chin, below and behind the cancer. At this stage it has become far more dangerous than when it was simply a local superficial sore.

The best treatment is a complete removal of all diseased structures by a competent surgeon. Advice should be sought by any adult who has an open sore of any sort upon the lip which does not readily disappear. Such a sore is not necessarily a cancer—nevertheless it should always be the subject of a thorough investigation.

### CANCER OF THE TONGUE

This type of the disease, a little less frequent than cancer of the lip, is like it in commencing as a crack or a raw spot, but in this case on the smooth edge of the tongue. It is usually considered to be a “canker” spot and most frequently is situated at a point in contact with a broken or decayed and sharp edged tooth. Pain, except in very slight degree, is usually absent. The small spot does not heal and slowly grows both deeper and larger. Its edges are a little, but not very much, harder than the rest of the tongue.

This is the favorable time for complete removal by a competent surgeon, for the operation can be more thoroughly done, is less extensive in its scope, and is much more likely to remove the entire tumor. An operation at a late stage can never be as successful as that undertaken promptly, while the process is still local and limited.

In the course of a few months, a small pea-shaped gland may be found

under the chin, or at the angle of the jaw, but it is often absent, or at least very difficult to feel, especially if the chin is held up and the muscles contracted during the examination. Gradually a slight odor and an increase of saliva is noted as the ulcer enlarges. This ulcer may be situated anywhere on the tongue, but is most often located laterally on the forward half, and as growth continues some of the free motion of the tongue is lost.

Advice should be sought long before this late stage has arrived, for cancer of the tongue is an extremely serious form of the disease.

### CANCER OF THE CHEEK

This type of the disease, here considered as of the inner surface of the cheek, in a vast majority of cases means a late stage of lip or tongue cancer.

Even when there is no sore on tongue or lip a small raw painless sore may sometimes appear on the inner side of the cheek, usually in contact with a bad tooth. It may often be situated in the depression between the cheek and the gums. It is essentially similar to tongue cancer in its progress, and advice concerning it should be sought at a correspondingly early date, that is, as soon as observed.

So far as known, chronic irritation is the only constant factor that appears in these three cancers, though syphilis seems to increase the susceptibility, and in this situation, as elsewhere, constant irritation seems rather to diminish local resistance to, than be the actual cause of, the cancer.

### CANCER OF THE NOSE AND THROAT

Malignant disease may occur in great variety in the nose, in the cavities communicating with the nose, and in the upper pharynx. It is always a serious condition and may develop at any period of life. Its causes are unknown, and its first symptoms may be obscure. The

earliest symptoms are, as a rule, swelling, which may interfere with the passage of air through the affected side of the nose, increased discharge from that side, local pain and neuralgia, headache, loss of appetite and of weight. Of course, these symptoms may appear only one at a time or very gradually, so as to suggest to the patient no more than inflammation, but it is a great mistake to wait before consulting a physician or surgeon, until a permanent swelling of the nose or cheek indicates the probability of a tumor. Occasionally a relatively slow growing tumor in persons from 12 to 20 years of age may cause permanent deformity to the growing bones of the nose and palate. Frequent bleeding from the nose or mouth with changes in voice, should suggest such a possibility, without waiting for the later symptom of difficulty in swallowing. Transillumination and x-ray are of help in diagnosis and should be used in all chronic nasopharyngeal disturbances.

The treatment of nasal tumors depends on the location, character, and extent of the growth. Many harmless tumors are permanently removed by a simple operation; sometimes malignant growths are cured. Other forms of treatment, such as electro-cautery, electrolysis, and radium are occasionally used with beneficial results in advanced cases or in elderly patients upon whom an exhausting operation would hardly be advisable. As a rule, the tumors of this region grow with great rapidity so that early recognition is imperative. Where a suspicion of such trouble arises, the case should at once have the benefit of the best expert advice.

#### CANCER OF THE LARYNX

The relative frequency of laryngeal cancer is unknown. About one in seven of the growths of the larynx are malignant. It is rare in youth; about 40 per cent. of cases occur between the ages of 50 and 60; and 84 per cent be-

tween 40 and 70. Over 80 per cent occur in men.

The causes are uncertain; possible local irritation arising from various conditions may excite it. The influence of tobacco is questionable; where this disease is present, however, the use of tobacco must be discontinued.

The earliest symptoms are a change in the voice, difficulty in speaking, a sense of discomfort in the throat, and some times a slight cough. Pain may be present or not. If present, it is sharp and shooting in character, and felt in the larynx. Loss of voice follows, with difficulty and pain in swallowing, and copious expectoration of fetid material. As the surrounding muscles and glands are invaded there is swelling of the neck.

If recognized very early, while the disease is confined to a small area within the interior of the larynx, successful operation is possible, but only at the hands of an experienced skilled surgeon especially trained for this particular work. Proper local treatment will save considerable suffering and possibly somewhat prolong life.

#### CANCER OF THE TONSIL

Primary cancer of the tonsil is an infrequent disease. This gland may be attacked either by sarcoma or carcinoma. Both forms begin in one tonsil only, therefore persistent symptoms confined to one tonsil should always arouse suspicion. Sarcoma of this structure may develop at any age, but is most common between 15 and 30. The early symptoms are congestion of the tonsil and nearby mucous membrane, soon followed by enlargement of that gland. Pain, when present at all, is usually dull, though there is often a sense of fullness in the throat, a thick voice, and difficulty in swallowing. The glands of the neck are slow to enlarge. Simple subacute tonsillitis, syphilis, and most other forms of tonsillar congestion and enlargement usually respond to medical treatment; sar-



coma does not. The growth is smooth, dark red, bleeds easily, and often ulcerates early. In the later stages the disease makes extensive advancement in all directions, involving the important structures of the neck, and making the outlook hopeless. Whatever prospect of successful treatment there may be lies in the early removal of the tumor or efficient x-ray or radium treatment.

Carcinoma of the tonsil is more frequent than sarcoma, and occurs like most forms of cancer, in middle and advanced life. The earliest symptoms, often very obscure, are pain in the region of the tonsil, congestion, swelling, and discharge from the tonsillar crypts. The surface is nodular and not inclined to bleed. Later, there is increasing pain, radiating to the ear and aggravated by the act of swallowing. There is fullness in the throat, and a thick voice. The progress is usually rapid. Ulceration occurs late, but the glands are involved early. Anemia follows with a swelling of the larynx to such an extent that it may be necessary to admit air to the lungs by inserting a tube into the trachea.

Carcinoma of the tonsil has been successfully treated by radical surgical removal. Half-way measures are worse than useless. At the best the results of treatment are usually only palliative. Of course, the smaller and less active the growth, and the earlier it is recognized, the better the outlook. Radium and x-ray treatment may prolong life but almost never cure.

### CANCER OF THE STOMACH

The stomach is the seat of this disease in nearly a quarter of all the fatal cases of cancer. This proportion is indicated by the figures of the Census Bureau for 1917 for the Registration Area of the United States. This form of the disease is certainly not diminishing but the death rate should be cut down by early diagnosis and operative treatment. The census report further shows that deaths from cancer of the stomach are in the pro-

portion of 19.3 per 100,000 population. It is a little more common in men than in women and occurs with increasing frequency with advancing years. Its onset is insidious but nearly always there are warnings which, if heeded, would save many a life at the period of its greatest usefulness.

The stomach is a muscular contracting bag lined with mucous membrane. When it contains food it is in continual motion. If the food consists of hard lumps instead of soft, well masticated material there is bruising of the lining of the stomach and this bruising is most frequent at the outlet where the muscular walls of the organ are in more violent motion. As a matter of fact, most cancers of the stomach occur near the outlet.

A stomach previously rendered sensitive by irritating substances has, in the very nature of things, a lowered resistance. Examples of such substances are alcohol, highly seasoned food, and tobacco. The excessive use of these agents may be accompanied by retardation of digestion, and by the secretion of too much acid. It is therefore thought that any condition which predisposes to ulcer of the stomach may be a forerunner of cancer.

The symptoms of ulcer and those of cancer are often similar. There is distress after eating, at times amounting to actual pain. A change in the desire for certain foods, such as a distaste for meat, is not uncommon. Belching, nausea and vomiting occur later. In the case of ulcer the vomiting of blood is more common than in cancer but this sign is not rare in the later stages of cancer. The general health suffers, there is loss of weight and sallowness of the complexion. There is no visible lump or one which can be felt from the outside, even by a skilful physician, until the disease is far advanced.

When the growth is at the outlet of the stomach, the symptoms of distress, pain and vomiting show themselves earlier than when the disease is remote from the outlet. Cancer of the

upper end or inlet of the stomach is accompanied by difficulty in swallowing solid food.

The outlook for cure in cancer of the stomach depends entirely upon the possibility of the complete removal of the growth. Unfortunately most of the cases in which operation is undertaken are so far advanced by the time the physician sees the patient that only palliation is possible. Since cancers in this region often follow ulcers it is self-evident that ulcers of the stomach should be recognized and cured before there is a cancerous degeneration. The various methods of modern diagnosis, including the x-ray, will usually establish the existence of a condition of the stomach requiring operation.

Complete and careful physical examination is imperative in all cases of indigestion beginning after the age of 40, and periodic examinations of all healthy adults should be encouraged.

### CANCER OF THE INTESTINES

This form of the disease is practically limited to the large bowel and one cancer occurs in this locality to every eight in the stomach. Two-thirds of the cancers of the large intestine are situated in its lowest portion, called the rectum. The greater part of those situated in the large intestine proper are in a portion of the bowel just above the rectum (on the left side), called the sigmoid. Intestinal cancer occurs in about the same frequency in both sexes, and differs from other forms of cancer in that it is found occasionally in young children.

There seem to be no local conditions which can be blamed for having any particular effect in the development of this type of the disease, though a small proportion of cases of cancer of the sigmoid develop on the site of a peculiar inflammatory condition—diverticulitis.

The symptoms differ somewhat according to whether the disease originates in the large intestine proper or in the rectum. In the large intestine

proper, the disease, for the most part, tends to spread circularly around the gut, producing constriction. The most consistent early symptom ordinarily noticed by the patient, therefore, is increasing constipation. It is regrettable that this symptom does not more often lead to a proper early investigation; many middle-aged or elderly persons apparently believing that an increasing constipation is natural with advancing years. The excessive use of cathartics may for a time combat this tendency but if the individual takes notice, he will find, usually, that action of the bowels under these conditions produces pain at a certain and constant point. X-ray diagnosis may reveal a narrowing of the gut even in an early stage.

In this particular form of cancer passage of blood is an inconstant symptom, many people passing little or none excepting in the later stages. Abnormal passage of slime or mucus is also infrequent.

This type of cancer does not tend to attain very large size, leading to recognition of a tumor or lump, until the later stages. The condition is insidious and until actual obstruction of the intestine exists the patient, unless unusually alert, may not realize that anything is the matter with him. Failure of general health, loss of flesh, alteration of color or jaundice are very late manifestations and may only become evident after the disease has existed for some time, even two or three years.

It must be said that this is an extremely difficult form of cancer to diagnose because of the lack or late appearance of the symptoms. Careful periodic medical examination after the age of forty would result in the discovery of many of these tumors which now go unrecognized.

### CANCER OF THE RECTUM

Signs here are somewhat more definite and more pronounced. Usually this kind of cancer starts from one side of the bowel instead of encircling it

and the manifestations of obstruction are usually delayed until late in the disease. Pain occurs more constantly than in the form just described but is also a variable quantity and an extensive growth sometimes exists without giving rise to very much pain until the later or hopeless stages.

On the other hand the passage of some blood and abnormal matter like slime or mucus, occurs quite frequently. The movements may have an unusually offensive odor. As in the large intestine proper, the disease is usually of slow growth and the patient's general health may be maintained for a long time.

Neither of these conditions is difficult of diagnosis. The errors are made from lack of careful recognition of the possible importance of symptoms just described. Accurate diagnosis requires the making of appropriate examinations by an expert, particularly x-ray pictures of the large intestine proper, and a thorough examination of the rectum both by touch and inspection, if necessary with the aid of an electrically lighted instrument.

Bleeding from the bowels is a symptom which never should be neglected. While the most frequent form comes from the presence of hemorrhoids, the fact that it does come from this source and not from some other condition must be satisfactorily demonstrated. Moreover, not infrequently the two conditions—cancer and hemorrhoids—co-exist. Most of the failures in the recognition of cancer of the rectum have come from this confusion with the symptoms or presence of hemorrhoids.

Treatment is surgical if the disease is in the early stage. Some portions of the large intestines lend themselves particularly well to the performance of a very satisfactory, safe and efficient radical operation. Radium and x-rays only prolong life and do not give permanent cures.

The early surgical treatment of cancer of the large intestine is often successful. Cancer of the rectum has, on the whole, greater technical difficulties.

The outlook for advanced and delayed cases is particularly bad.

### CANCER OF THE BLADDER

Cancer of the bladder is fairly frequent, occurring in about 1 out of 200 malignant tumors; which means that in this country four or five hundred people die every year from cancer of this organ. The disease is five times as frequent in men as it is in women, and rarely occurs before the age of 40, while the greatest number of cases are seen in patients from 50 to 70 years of age. It is one of the most difficult forms of cancer to diagnose and treat, because such cancers may grow to a considerable size before they give any symptoms. Pain, which is not infrequent in these types, occurs only at a late stage, and then sometimes only as a feeling of bearing down or while straining to pass urine. It is rare that a tumor is so large that it can be felt through the abdominal wall. It is of the utmost importance, therefore, that the cardinal symptom of cancer of the bladder should be generally known. This symptom is blood in the urine, which appears without warning or apparent cause. When it is noticed a physician should be immediately consulted; yet many cases of bladder carcinoma are allowed to run on for a long time, simply because the patient thinks that a little blood in the urine is a matter of no significance since there is no pain or stoppage of urine. In the late stages the bladder will always become severely inflamed and foul-smelling urine will be passed with difficulty and pain. This means that the tumor has spread to the neck and walls of the bladder and cure is then difficult or impossible. While blood in the urine is not necessarily a symptom of cancer, for it may be caused by a stone in the bladder or even by non-malignant tumors of the bladder or by certain diseases of the kidney—still, these facts can be ascertained only by a surgeon. The blood may be very slight and only occasional in the early stages of the non-malignant tumors (or even in the

dangerous kinds); but in over three-fourths of the cases these tumors ultimately turn into a malignant form and then are extremely difficult to cure by surgery. It must be remembered, therefore, that when a bladder tumor gives much pain or can be felt in the abdomen it is usually hopeless. The patient should consult a surgeon the first moment that blood is seen, since the tumors grow slowly, as a rule, and do not spread in the body until they have been present for a long time.

A certain cure can be effected only by removal of the tumor from the bladder. X-ray and radium are of more value in delaying the growth and in relieving pain than they are in affording permanent relief. The electric current in the form of a high frequency current is also of little value in the treatment of cancer of the bladder though it is very beneficial in the relatively harmless papillary outgrowths which occur not infrequently in this organ. The three things to be remembered, therefore, are that the appearance of a reddish coloring matter in the urine is a danger signal whether or not it is accompanied by pain or stoppage of the urine, that a surgeon should be immediately consulted, and that the only way in which he can make a positive diagnosis is by inserting an examining instrument into the bladder so as to look in and see just what is present. If a physician cannot do this he can only guess at the cause of the trouble.

### CANCER OF THE KIDNEY

The only symptoms of cancer of the kidney are a lump in the abdomen and blood in the urine. A shadow may be seen on x-ray examination. Pain in the back is rare unless the tumor is large. The only cure is operation as early as possible. Fortunately, such cancers are rare.

### CONCLUSIONS

From what has been presented it will be noted that the conclusion of many of the leading statisticians of this

country is that cancer is slowly increasing in the United States and that it has become one of the most important causes of death in people forty-five years of age or over.

The public in general is ignorant of the symptoms of cancer and not aware of the necessity for early treatment if good results are to be obtained. Because of this lack of knowledge relatively few patients go to a physician in time for satisfactory treatment.

The purpose of this handbook is to inform the public that the important factor in the successful treatment of cancer is its early recognition, which cannot be accomplished unless those who have tumors consult a competent physician on the discovery of the first symptoms.

As cancer is neither a germ disease nor contagious, but springs from some abnormal growth of cells in the body, it cannot be handled by such public health measures as have so greatly diminished typhoid fever and tuberculosis.

As, therefore, physicians cannot by any means control the incidence of cancer, their efforts are turned to the direct cure of the disease or of any slight trouble or irritation such as may lead to cancer.

The opinion of the most able physicians and surgeons of the country at the present time is that medicines taken internally are not effective as cures for cancer. Neither pastes nor other non-operative methods widely advertised by quack doctors (some of whom unfortunately are physicians), can cure cancer. The favorable results, reported in the newspapers and in the advertising material and testimonials of these charlatans, are obtained with ulcerating growths which are not cancerous. There is no question that a cancer can be destroyed by a caustic, but much of the normal tissue about the cancer is also eaten away and the caustic is less easy to control in its action and much less certain than the removal of the whole tumor by the knife. Cancer cannot be cured by osteopathy or Christian Science.

Radium has been much used of late in the treatment of cancers of the skin, and has been found to be of great value in certain types, even when small quantities are employed. Other cancers are very difficult to cure by radium, even when used in large quantity. When the tumor has grown into the bone or cartilage, or has spread by previous ineffectual treatment by caustics, or when the growth is complicated by syphilis or by tuberculosis, the results by this method are unsatisfactory. Cancers of the tongue, lip, and mouth, and especially those of the womb, have been treated with varying success, but it is still the general opinion of those who work with radium that for the present at least all cases of dangerous or malignant tumors which can be successfully removed by operation should be so treated, radium being reserved for such tumors as are beyond the reach of surgery. Deep-seated cancer, such as those of the breast, lung, stomach, abdomen, intestinal tract, bladder, and elsewhere, are usually beyond the effective reach of radium, but often much improvement can be obtained by carefully adjusted applications. The proper use of radium requires a large experience and great skill if serious burns are to be avoided, and as a rule large quantities must be employed, so that not every physician has a sufficient amount with which to treat cancer. On the other hand, x-rays have much the same effect on cancer that radium has. Suitable apparatus is not very expensive, so that if radium is not available x-rays may very properly be used in treating those types of cancer which are favorably influenced by

radium. Whether x-rays are just as effective as are large quantities of radium in the general treatment of cancer has not yet been decided. It is not possible to use them as effectively in some cases of internal cancer, because while radium can be inserted into the bowel or into the uterus, it is very difficult to get a sufficient quantity of the x-rays to penetrate the body to these organs. In superficial cancers, however, when radium is not available, the x-ray should be used, and its use, soon after incomplete or palliative operation often temporarily checks the growth and greatly prolongs the life and comfort of the patient. In places where radium is not available, the x-ray is, therefore, the best substitute.

Every one should remember, therefore, that cancer begins as a very small growth and if it could be removed a short time after it appears would always be curable. As the symptoms are obscure and not always characteristic, it is necessary to consult a good physician at the earliest possible moment and not to delay or to apply home remedies in the hope that the trouble is of no importance. This should be borne in mind by every person over forty.

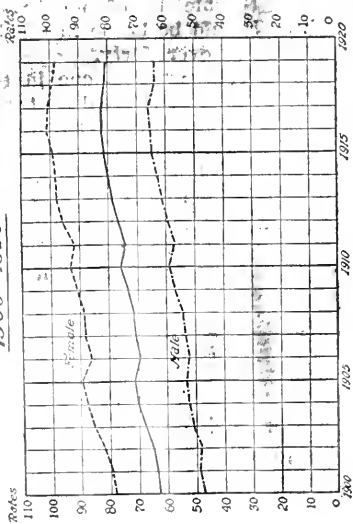
Cancer kills one in ten of the people of the United States after that age. The leading physicians of the country believe that the best results at present are obtained by cutting the tumor out as soon as it appears and not waiting for it to grow, as it always does, and affect other parts of the body so that its removal is made much more difficult or dangerous.

The best insurance against cancer, and for the prolongation of life, is a careful physical examination at the hands of a thoroughly competent physician. These examinations should be periodic, at least twice each year.

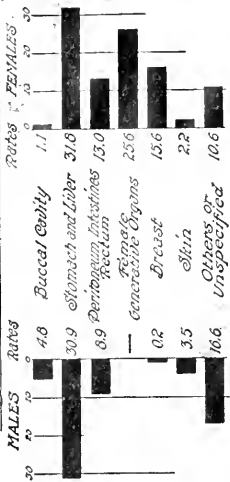
# Mortality from Cancer United States Registration Area

*Rates per 100,000 of Population*

## General Cancer Mortality 1900-1920



## Organs and Parts: 1915-1919



## Race: 1915-1919



## Urban and Rural 1915-1919



## Age and Sex: 1915-1919



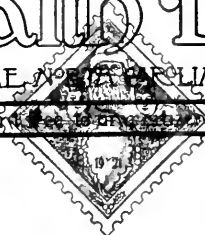
*Note: Approximately, there will be 90,000 Deaths from Cancer in the Continental United States during the year 1921, of which 53,000 will be of the Buccal Cavity, 35,500 of the Stomach and Liver, 15,000 of the Peritoneum, Intestines and Rectum, 15,700 of the Female Genes, 8,400 of the Breast, 3,100 of the Skin and 15,200 of Other Organs and Parts.*



# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free of charge to any physician of the State upon request.



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### FREE HEALTH LITERATURE

The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in.

WHOOPING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
CARE OF THE BABY  
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TYPHOID PLACARDS  
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MALARIA

SMALLPOX  
ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES  
CATARRH

### FOR EXPECTANT MOTHERS

Rose M. Ehrenfeld, R.N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend send name to the State Board of Health, and give approximate date of expected confinement.

### THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for The Bulletin each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.



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## HOOVER ON CHILD FEEDING

I believe that the definite institution of supplementary child-feeding in public schools in certain places is a necessary part of municipal endeavor. Coupled also with this, I am a firm believer in clinical examination and reports to parents as a definite part of school work.

Some may object that this extension of medical supervision by community nurses, clinical inspection of children in the schools, a supplemental meal in schools of certain sections, all tend to an extension of too intimate government.

In the very creation of free schools and compulsory education itself we have accepted the fact that we cannot as a Nation rely for the upbuilding of the race upon the initiative of the parents alone. No one can deny that the physical development of child life is of equal importance with education.

—HERBERT HOOVER.

## ANNUAL MEETING BIG SUCCESS

The searchlight was turned on tuberculosis at the annual meeting of the North Carolina Tuberculosis Association, held in Greensboro, October 6 and 7, 1921.

North Carolina was proud to be honored during the meeting by the presence of three great lights in tuberculosis work; men who are devoting their time and faculties to the study of tuberculosis and to the solution of its control.

Dr. James Alexander Miller, President of the National Tuberculosis Association, in which position he is head

of the tuberculosis campaign in this country, delivered the principal address at the general session, on the evening of October 6. The courthouse, where the meeting was held, was packed to capacity as Dr. Miller outlined the salient points in the fight against disease.

Dr. C. J. Hatfield, Managing Director of the National Association, strongly presented the need for more intelligent care of the tuberculous ex-service man and earnestly asked that the people familiarize themselves with existing conditions and co-operate with the Government in its effort to give these men the full benefit of treatment and training provided for them. Dr. Hatfield also spoke on numerous other sociological and medical phases of tuberculosis during the meeting.

Mr. F. D. Hopkins, Administrative Secretary of the National Tuberculosis Association, presented the more practicable side of the campaign against tuberculosis, outlining plans and methods of combatting the disease. Extracts from the remarks of these three leaders are given on other pages of this Bulletin.

North Carolina was represented on the program by the very best talent in the State, among whom were Dr. W. L. Dunn, Dr. C. H. Cocke, Dr. John D. McRae, and Dr. Joseph B. Greene of Asheville; Dr. F. M. Hanes of Winston-Salem; Dr. O. L. Miller of Gastonia; Drs. C. Z. Montgomery and B. K. Hays of the U. S. P. H. S. at Oteen; Dr. R. L. Carlton of Winston-Salem; Drs. L. B. McBrayer, P. P. McCain and R. McBrayer of Sanatorium. The State Health Officer, Dr. W. S. Rankin, presided at the general session in the afternoon and correlated the various papers presented at this session.

The special session devoted to the Seal Sale was presided over by Mrs. Gordon Finger, President of the North Carolina Tuberculosis Association. This session presented a report of the year's work and outlined the program and plans for the ensuing year.

The report shows clearly that anti-tuberculosis work in the State is paying big dividends in the number of lives saved and cases prevented. Just a glance at the report showing the decrease year by year for North Carolina will show that we are on the right track, and though the progress is slow we are gaining each year:

YEAR	No. deaths from Tuberculosis
1913.....	4,800
1914.....	4,300
1915.....	3,710
1916.....	3,517
1917.....	3,482
1918.....	3,391
1919.....	3,015
1920.....	2,908

Lives saved in seven years..... 9,277

That we may confidently expect a further decrease in deaths from tuberculosis was the consensus of opinion expressed at the meeting. This prediction was made on the assumption that those attending the meeting, more than eight hundred in number, were vitally interested in checking the spread of the disease and would become missionaries, teaching the rules of prevention of tuberculosis to those in their town and community.

Eighteen counties in the State sent colored representatives, men and women who are trained to spread the gospel of right living among their people. The colored leaders are very much in earnest in improving living conditions among their people and the white people should stand firmly behind these trained teachers, giving them their moral, physical and financial support for the worthy work they are doing.

The Association adopted the following slogan for the fight against tuberculosis and calls under its banner every man, woman, and child in North Carolina to do their part:

*"Every person in North Carolina who has tuberculosis has a right to know*

*it, to be properly treated for it, and to be so supervised that he will not communicate it to others."*

The ways and means of applying this slogan are more fully explained in the succeeding pages of this Bulletin, and we earnestly ask your co-operation in hastening the dawn of that day when tuberculosis will cease to be a death reaper in our State, and we shall save the thousands who are maimed and disabled every year from this one cause.—A. W. S.

## TEACH US HOW TO LIVE

At the annual meeting of the North Carolina Tuberculosis Association Prof. E. C. Brooks, State Superintendent of Public Instruction, gave a brief synopsis of Mrs. Shelley's story of the phantom, Frankenstein. He told how Frankenstein created the strange monster and infused it with life, and after giving it life how these words came to him, "Now that you have created me, teach me how to live."

The savage in his natural state was usually an excellent specimen of physical manhood, several factors contributing to his athletic supremacy. The chief cause, no doubt, was the policy of the savages in living and believing in the survival of the fittest. No attention was paid to the sick and they very soon died, leaving only the strongest to perpetuate the race. This worked very well while there was unlimited expanses of territory in which to roam, but look at the Indian today—an easy prey to disease of all kinds. He has never been taught how to live.

The same condition applies to the Negro race, especially as regards tuberculosis, which is very, very often fatal, because he has not been taught how to live.

Civilization has imposed certain barriers and restrictions to which we must conform. The law forbids us, under penalty of death, to murder a fellowman. Yet we may, and do, with impunity murder a great many persons by refusing to obey simple rules of sanitation which are necessary in civilized communities if good health is to prevail.

Teach us how to live is a prayer that may well be made by old and young alike. We too often delude ourselves into believing that restrictions always apply to some one else, but it makes no difference who we are, young or old, rich or poor, sick or well, there is one restriction that we should observe, and our observance will teach others one of the rules of "How to Live." We should never cough or sneeze without shielding our mouth and nose with a handkerchief. Ordinary decency should impel every one to do so, but sad to state, it does not. Every one that is careless in this matter has potentially committed a homicide.

Disease is often spread by those apparently in good health. We can control the patient who is ill enough to be in a hospital or sanatorium, but the man or woman who walks the streets and scatters disease, either from ignorance or lack of interest in protecting others, is answerable only to himself or herself, and to them we appeal to learn how to live and let others live.

The mothers and fathers of North Carolina have created their phantoms in their children, and now they stand at the door and cry, "Teach us how to live."

The answer to their cry is the Modern Health Crusade—the Crusade in its practical application as originated by the National Tuberculosis Association and developed by the North Carolina Tuberculosis Association. It inculcates with its teaching the fundamental principles and foundation of good health, whereby the children may learn by actual practice to do the things that are necessary to maintain good health. The Crusade, as explained on another page of this Bulletin, is designed especially for children between the ages of six and sixteen, as it is known the child will readily absorb the teaching at that age, and it is hoped that he will become so accustomed to the acquired good habits that their performance will be part of his everyday routine in later years.

The supplies for conducting the Crusade are distributed by the North Carolina Tuberculosis Association,

Sanatorium, N. C., at a cost of 5 cents per pupil, and include all material necessary for a fifteen-week Crusade course.

Parents, ask the teachers to use the Crusade in their school course.

Teachers, teach the children in your care how to live—the Crusade will answer the problem.—A. W. S.

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## YOUR PART IN FIGHT AGAINST TUBERCULOSIS

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The annual meeting of the North Carolina Tuberculosis Association brought to the attention of the people of North Carolina with great force the appalling loss of life and disability caused each year by the arch enemy of mankind: tuberculosis.

The meeting did more than this, it presented fairly to the people of North Carolina the choice of saving these lives or letting them die. Speakers from this State and from other States in the Union, men who are learned in the way of tuberculosis, assured us in the strongest language that every death from tuberculosis is a crime, that the disease can be prevented if we all join in the fight, and that in the early and moderately advanced stages it is curable.

The one thing most necessary to combat tuberculosis, as most other things, is money. With it we can erect county sanatoria for the care of the far advanced cases, providing a place for them where they can spend their last days in comparative comfort, and where they will not be a source of infection to others. We can also increase the capacity of the State Sanatorium and lower the maintenance charge to patients, thus providing room for many more of the curable cases. These are functions of the state and county governments, but every one can aid by telling their representative to the General Assembly or board of county commissioners of their desire to stop the spread of tuberculosis by providing treatment for those infected.

Every one in the State may take a more active part in the campaign by lending their support to the North Carolina Tuberculosis Association,

which is an independent organization created for the sole purpose of combating tuberculosis. The Association is an association of the people, having on its board of directors representatives from all sections of the State. All plans and policies of the Association are presented to the board of directors and are adopted only after careful consideration has been given to the work proposed and in the opinion of the majority is deemed advisable.

As stated, it takes money to successfully carry on a campaign of this magnitude. The Association is supported exclusively by the sale of Tuberculosis Christmas Seals, and your great part in the work is to buy generously of these seals, which will be placed on sale from Thanksgiving to Christmas, if you want to have a part in the work.

The Association does not ask that you blindly support a cause about which you know nothing as to how funds are spent, or of its plans or desires. We, therefore, submit for your approval a REPORT OF STEWARD-SHIP of the funds entrusted to our care last year which amounted to \$18,062.81:

Employment of expert in the diagnosis of tuberculosis.....	\$ 2,964.18
Training public health nurses for tuberculosis work.....	425.00
Modern Health Crusade in the schools .....	989.65
Educational and seal campaign .....	4,021.53
Salary of managing director and assistants .....	1,916.09
Work among the negroes.....	8,070.98
Total spent for above purposes .....	\$18,387.43

(The excess amount expended is accounted for in a surplus from receipts of 1919.)

The above amount does not include all money raised by the sale of seals. Where a local chairman is in charge of the seal sale, every dollar you give to the cause is divided as follows:

For the State Association .....	\$0.15
For the National Association .....	.10
For the Local Association .....	.75

You therefore see that in organized territory the major portion of the funds raised are used right in your own town or community, and are used to aid those suffering from tuberculosis who are financially unable to provide for themselves, in the following manner:

Payment for treatment of patients in sanatoria.

Relief of whatever medical or material form may be needed for families in which there is a case of tuberculosis.

Medical or material relief for the patient taking home treatment.

Support of all forms of work among children leading to the prevention of tuberculosis.

Expenditure of funds in the effort to secure establishment and operation by public authorities of survey, nursing, clinics, sanatorium, open-air schools and kindred agencies.

Employment of nurses for tuberculosis surveys and nursing of the tuberculous sick.

Direct educational work as to the nature, treatment and prevention of tuberculosis.

Purchase of equipment for home treatment, such as tents, cots and sleeping porches.

Purchase of sputum cups for patients that safe disposal may be made of sputum, and thus prevent others from becoming infected.

These are the things we have done, are doing, and will continue to do in local communities with receipts from the sale of Tuberculosis Christmas Seals.

The National Association receives 10 per cent of your donation. It is very necessary to have a strong National organization, which can be used as a clearing-house for distributing information regarding tuberculosis. The National Association is also very valuable to the State Association as it forms a strong central organization which acts in an advisory capacity to the state associations and conducts national educational work as to the nature, care and prevention of tuberculosis by the publication of monthly bulletin, newspaper articles, special literature, and preparation of moving picture films. It employs the best

talent in the country to conduct medical research in tuberculosis, to the end that the very best methods of treatment and prevention may be known, and investigates all so-called cures for tuberculosis that the public may be informed as to their merit. They can furnish expert advice for mapping out comprehensive plans to fight tuberculosis, suitable for cities, counties, states and the country. The foregoing are only the major activities of the National Association.

The plan of work as outlined above is proving effective in North Carolina. We only need to intensify our efforts and increase the staff of workers sufficiently to cover the whole State in order to show even greater gain in the enemy territory.

The following plans are submitted for work during the ensuing year, and you can show your approval by the purchase of Christmas Seals to the extent of your ability:

(1) To increase the diagnostic and consultation service by employing two experts in the diagnosis of tuberculosis. These specialists would be sent to any point in North Carolina where six or more desired an examination for tuberculosis. With two workers in this field, instead of one as at present, we would be enabled to fill requests for examinations promptly. This is a very important part of the Association's work. The successful treatment of tuberculosis depends on the early discovery of the disease, and the expert can very often be of assistance to the family physician in confirming diagnosis and advising as to treatment.

(2) The supply of trained tuberculosis nurses is inadequate to fill the demand and the Association has agreed to loan qualified registered nurses an amount sufficient to complete a post-graduate course in tuberculosis nursing with the understanding that upon completion of the course the nurses will do tuberculosis nursing in North Carolina.

(3) The most susceptible age for tuberculosis infection is in childhood.

If the children can be induced to keep themselves "fit" and resistant to disease during this period the chances are that tuberculosis will never be able to gain a foothold. It is generally conceded that a large portion of cases of tuberculosis that develop in adult life are the results of childhood infection, the disease "flaring up" when the resistance is lowered by other diseases, overwork, insufficient nourishment, etc. The Modern Health Crusade is designed to teach, by practice, the health chores that are necessary to keep the children in good physical condition all the time. The Association is sponsor for this work in North Carolina and distributes all the supplies for conducting the Crusade. There is no phase of preventive work in tuberculosis more important than keeping the children free from infection, and the Crusade is helping to do just that.

(4) The most serious tuberculosis problem in North Carolina at this time is the tuberculous negro. There are more deaths and more cases of tuberculosis among the negroes in North Carolina than among the white population, and the white population outnumbers the colored  $2\frac{1}{4}$  to 1. Not only to protect ourselves, but to save and prevent these cases, it behooves us to use every resource at our command. We are teaching the negro preventive measures as speedily as possible and sending trained workers to homes where there is a case of tuberculosis, and using other methods more fully explained in another article in this Bulletin.

(5) The educational program against tuberculosis is necessary: First, to teach prevention and guide the patient to the right path for a cure when infected; second, to maintain the interest of the public and keep them fully advised as to the incidence of the disease and their part in prevention. To do this we issue various bulletins and printed matter, which is distributed where it will do the most good.

(6) We have outlined the major offensives in the program against

tuberculosis as conducted by the State Association, and on this we rest our case.

EVERY READER OF THE BULLETIN SHOULD PURCHASE AT LEAST ONE HUNDRED CHRISTMAS SEALS. If you have not been supplied, use the coupon on page 35 in ordering direct from headquarters.—A. W. S.

### MEMORIAL TO DR. J. E. BROOKS

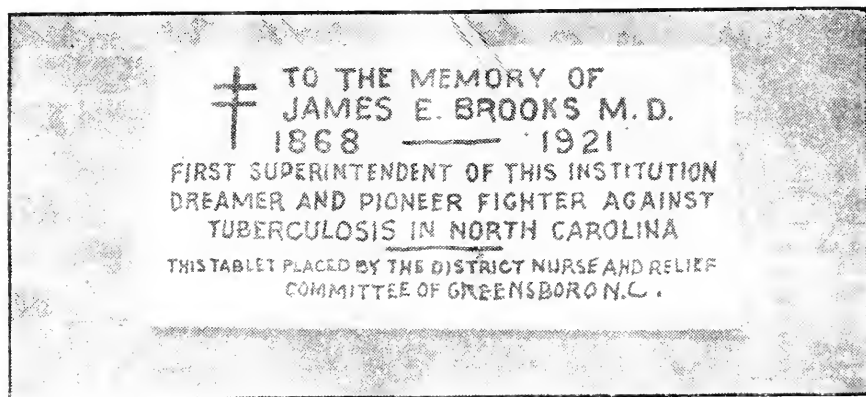
(Resolution presented at annual meeting of the North Carolina Tuberculosis Association by Mrs. E. D. Broadhurst.)

In this day when a large percentage of our strong-minded men of character and ability are giving most of their time and attention to making

get well, he was up and about at all times working with and teaching the poor and the ignorant the elementary rules of sanitation.

His early manhood days were spent as a general practitioner of medicine, but he spent a great deal of his time dreaming and growing his own belief that *tuberculosis is curable and in talking his beliefs to others.*

He conceived the idea of placing North Carolina in line with other progressive States and urged the Legislature to appropriate money to establish the sanatorium at Montrose, North Carolina. The Legislature rewarded his zeal and backed his faith with a very small appropriation, out of which has grown the magnificent plant at Sanatorium, North Carolina, whose



Memorial Tablet to Dr. J. E. Brooks at Sanatorium

money, some of us feel that the death of a strong-minded, strong-charactered man who found pleasure in helping the helpless is cause sufficient for us to stop, think on his services, and make a record of the fact that such a man did live, served his day and generation well, and died in the faith that *he lives best who serves best.*

As a little child I remember Dr. James E. Brooks as a teacher of sanitation among the people of Chatham County. Believing that it is easier and cheaper to stay well than it is to

growth and usefulness must continue to spread so long as the kingly spirit of Dr. L. B. McBrayer hovers over it.

The District Nurse and Relief Association of Greensboro—the sworn enemy of tuberculosis in this county—has arranged to place a tablet to the memory of Dr. James E. Brooks at Sanatorium. But that is not enough. We want to make a record of the fact that *we are with him yet in the belief that tuberculosis is curable and those afflicted should receive the help, if necessary, from the county in which*

they live; and to that end, Mr. Chairman, I offer the following resolution:

*Whereas*, Death has claimed Dr. James E. Brooks, a lifelong fighter against tuberculosis in this State—claimed him at a time when we need the help of all strong men to aid us in our effort to turn a scattered fighting line into a solid people's fight for their own protection against the plague of tuberculosis: *Now, therefore, be it*

RESOLVED 1ST. That in the death of Dr. James E. Brooks the State lost a most useful and a most unselfish health expert at a time when unselfish health experts are scarce.

RESOLVED 2D. That in the death of this pioneer fighter against tuberculosis the North Carolina Tuberculosis Association lost a valiant helper and safe adviser.

RESOLVED 3D. That a copy of these resolutions be spread upon the minutes of this meeting for a permanent record, a copy given to the State papers for publication, and a copy mailed to Mr. R. H. Brooks, a brother of the deceased, at Greensboro, N. C.

Dr. W. S. Rankin, Chairman: "I know that a number of you knew Dr. Brooks, a citizen of this county and a man who, as Mrs. Broadhurst's resolutions fittingly state, was responsible for the first direct steps that this State took in the erection of Sanatorium and in dealing with tuberculosis. I knew Dr. Brooks intimately; we were officially related for some time, and he always impressed me as having profound understanding and a man of the highest sort of idealism. I have always thought he was so overcharged with the highest ideals that the slower progress we have to make in attaining ideals as high as Dr.

Brooks had attained wore upon his nerves and his body and led to his premature death. I think Dr. Brooks in a very literal way sacrificed himself for the good of his fellowman. He always took life seriously. His whole thought and effort was along high altruistic lines. He was a man who actually did give his life for his fellowman.

"I am delighted that these resolutions should have been introduced by a fellow-citizen of Guilford County, and know that this body will take great pleasure in passing them."

Resolutions duly seconded and unanimously adopted by a rising vote.

### STEREOSCOPIC X-RAY PLATES OF THE CHEST IN DIAGNOSIS OF TUBERCULOSIS

Dr. J. D. McRae of Asheville, expert Roentgenologist, read a paper at the annual meeting of the North Carolina Tuberculosis Association in Greensboro, in which he said: "I do not consider a flat plate worth anything in the diagnosis of diseases of the chest, and I would not use an X-ray laboratory that is not equipped for taking stereoscopic plates."

Dr. McRae was associated with Dr. H. Kennon Dunham of Cincinnati, who is acknowledged the equal of any in the X-ray of the chest, in the conduct of the X-ray laboratory at Oteen when that hospital was under the United States Army.

Dr. McRae visited the North Carolina Sanatorium after the Greensboro meeting and was delighted with the X-ray laboratory and the work being done there.—L. B. McB.



## WHAT WAS

IN THE YEAR of our Lord

\* \* \*

NINETEEN hundred

\* \* \*

AND Fifteen

\* \* \*

MANY PEOPLE in North Carolina

\* \* \*

WERE SORELY afflicted with

\* \* \*

TUBerculosis and

\* \* \*

2710 were smitten

\* \* \*

DEAD which is more

\* \* \*

THAN 10 every day

\* \* \*

AND THE UNDERTAKERS

\* \* \*

WAXED RICH because of the

\* \* \*

GREAT PLAGUE in the land

\* \* \*

AND THEN the people

\* \* \*

ROSE UP and cried with

\* \* \*

A LOUD VOICE for

\* \* \*

DELIVERANCE from the

\* \* \*

DRAGON THAT destroyed

\* \* \*

THE YOUNG men and

\* \* \*

FAIR WOMEN. Then

\* \* \*

A PROPHET arose

\* \* \*

AND SPAKE unto the people saying

\* \* \*

GO YE INTO all the land

\* \* \*

SELLING TUBerculosis Christmas  
seals \* \* \*

AND TELL the people

\* \* \*

THE WAR is on.

## WHAT IS

THEN SOME people in

\* \* \*

NORTH CAROLINA bought

\* \* \*

TUBERCULOSIS Christmas seals and

\* \* \*

FROM THAT day to this

\* \* \*

THE FIGHT has been on

\* \* \*

AND TWO lives have been

\* \* \*

SAVED EVERY day this year

\* \* \*

AND 7218 of our people

\* \* \*

WHO WOULD have been on

\* \* \*

THE BED of affliction today are

\* \* \*

WELL and strong because

\* \* \*

THE ENEMY is

\* \* \*

WOUNDED and cannot do as

\* \* \*

MUCH DAMAGE as before

\* \* \*

BUT HE is not

\* \* \*

DEAD and we all want

\* \* \*

TO KILL HIM and

\* \* \*

EVERY ONE can

\* \* \*

HELP by obeying

\* \* \*

THE PROPHET and

\* \* \*

BUYING more

\* \* \*

CHRISTMAS seals this

\* \* \*

YEAR THAN you did

\* \* \*

LAST AND telling your

\* \* \*

FRIENDS to do the same.

—A. W. S., with apologies to K. C. B.



"TRUST YE IN GOD AND KEEP YOUR POWDER DRY"

## Words of Encouragement in the Tuberculosis Fight and Hope of Conquest

By DR. JAMES ALEXANDER MILLER, *President of the National Tuberculosis Association, New York City*

(Extracts from address before the annual meeting of the North Carolina Tuberculosis Association, Greensboro, October 6th and 7th, 1921.)

WE HAVE at this time reason for taking new courage and new hope. In the year 1900 (twenty-one years ago) the death rate in tuberculosis was 202 for every 100,000 population in the United States. In 1920 the death rate was 114, a reduction of 43 per cent. If the same death rate which obtained in 1900 had obtained during 1920 there would have been 32,000 more deaths in this country from this disease than there were. This has been general throughout the country. North Carolina has its share in this remarkable decrease. In 1915 the death rate from tuberculosis was 156 per 100,000. In that year there were 3,710 deaths. In 1920 the death rate was 112, two points lower than for the whole of the United States, and during this year there were 2,908 deaths from tuberculosis in the State.

When we think, however, that this decrease is in a preventable disease, encouraged and enthused as we may be by these results, we must still remember the 100,000 needless deaths in the United States and these 2,900 deaths in North Carolina.

The great reduction in the death rate throughout the United States and greater still in North Carolina has led us to very carefully analyze the possible causes. It has been so marked in the last three or four years that some of us have wondered and have been a little skeptical as to whether we have a right to claim the crusade against the disease as being responsible for it.

I think there has been going on through all the country for these years a gradual appreciation of the fact that health is a worth-while asset; that we have, through the cam-

paign against tuberculosis and all these other campaigns, been inculcating in the lives of the people a better idea of how to live. We have put in the minds of the government and employers the responsibility for a better condition of living for those who cannot control it. We have raised the standard of living of the people of our country. We have carried out as far as may be the principles of trying to fight infection from one person to another. We have provided hospital accommodations above anything that has ever been heard of in any other country.

We believe, therefore, we have a right to claim through all these means—some the result of economic conditions and others the direct effect of this campaign which we have been waging—that a very large share of this remarkable result is due to our efforts. And that should encourage us and make us happy and proud and glad to take our part in the campaign alongside of those spectacular results which have been obtained in some of these other diseases. I think it means to us in the tuberculosis fight new courage and new cheer, because some times we have been discouraged, the results we have obtained have been so slow in coming.

There is another aspect which I think helps us to prove the case, looking at it from the reverse side. I have given you an idea of health conditions, particularly tuberculosis, in America, where, in spite of war, conditions have been excellently good. Let us turn to Europe a moment and picture conditions there. A whole continent devastated, a condition during the war and in these tragic years after-

wards in the countries of Russia and Poland and the Balkan States and Central Europe and Austria and Germany and occupied France and Belgium such as the world has never before seen on a large scale.

Tuberculosis has been increasing by leaps and bounds, and in many of these countries it is three and four times what it was before the war, and there we can see lacking the things we have been trying to do here. Consequently I think we can make up our

minds we are on the right track, that we must press on with new courage to take up the burden of still further trying to eliminate the disease, and we can feel that we are in a winning fight, that we are reaching toward the goal. If we press on in this way, arousing all our people, laity, physicians, young and old, banded together with a knowledge of what they should do, and a feeling of responsibility for what they ought to do, we can gradually eliminate this dread disease.

## A National Health Program for Schools

By MR. F. D. HOPKINS, *Administrative Secretary, National Tuberculosis Association*

(Read before the North Carolina Tuberculosis Association in its section on the Modern Health Crusade)

IT is a most interesting time to consider a National health program for schools. For one reason this subject has probably never received as much study as at the present moment. One might assert, also, that doubtless no phase of education is being discussed so widely as that of health education. For instance, three events of recent weeks may be cited to show the important progress that is being made in this field: First, a special committee of the National Child Health Council has issued a statement that merits wide circulation. Secondly, Commissioner John T. Tigert of the United States Bureau of Education has issued through the newspapers a statement showing his interest in the nation-wide adoption of health training and instruction in schools. He says:

"We have long taught the theory of health in the schools through courses in physiology. We are combating disease and defects through school doctors and school nurses. We have only lately come to see that it is the daily practice of health habits which is important, and that it is the duty of the public schools to give to every child this foundation for personal success and value as a citizen.

"The question is, How can children be trained into the practice of health

habits? First of all, the intense interest of the children must be won. It is in response to the demand of the teachers of the country that the Bureau of Education is working upon a system of health teaching designed to create this interest among the children, not by talking and telling, but by providing activities in which the observance of health rules is merely observance of the rules of the game. If such a system can be given to the schools generally as a basis for health courses adapted to local needs, we may reasonably expect to see positive results in the health of the school children of America.

"It may then soon cease to be true that 20 per cent of the children in our schools are physically below par."

Thirdly, the United States Bureau of Education has issued within the last few days a booklet of "Suggestions for a Program for Health Teaching in the Elementary Schools." These booklets are revised from time to time.

### The Aim of Health Teachings in the Schools

The aim of educational hygiene is, of course, to make healthy children. The declaration of principles set forth by the special committee of the National Child Health Council gives

such a clear statement of fundamentals that it may be worth while to read it:

### Fundamental Principles of Educational Hygiene

"(a) The aim of health education should be to assure healthful living by (1) the formation and practice of habits essential to health, (2) the acquisition of knowledge necessary to health, (3) the development of right attitudes and ideals with regard to health, both physical and mental, and (4) the creation and maintenance of a healthful environment.

("NOTE: Parents and teachers should remember that modern hygiene is positive rather than negative. The mental attitudes developed during training are essentially important. Children should be led to form correct health habits because such habits will make them stronger, better looking, better able to work and play, and better able to help others. Special care should be taken to see that they do not acquire an unwholesome habit of thinking too much about themselves and their physical condition.)

"(b) Health training and instruction should be carefully adapted to the stages of physiological and psychological development of children. In the early grades it should be concerned primarily with training in the formation and practice of health habits and later with instruction and the development of attitudes and ideals.

"(c) Throughout school life health education should be one of the objectives of the whole educational process, and school programs should be so organized that each subject and activity will contribute its appropriate part to education in health. In the early years, moreover, a primary aim of all education should be general healthful development in its broadest sense, both physical and mental.

"Health is an end to be gained rather than a subject to be taught, but in all grades in which a definite period for instruction is assigned to it it should have a standing of equal importance with other major subjects in the school curriculum.

"(d) Health training and instruction should be so graded as to be interesting, easily understood, and stimulating to the older children as well as to the younger children, and should be applicable to their actual living conditions. The aim should be to develop permanent health interests as well as habits of healthful activity, both physical and mental.

"(e) Health education should be designed *primarily* to fit the needs of the average so-called 'well' or normal child. Practically all children temporarily below par will be brought up to proper condition through the development of such health habits as should be acquired by the whole class. Those with definite diseases, defects and disabilities should be dealt with in special classes or by special methods, under such expert supervision as may be required.

"(f) It should be definitely recognized that health education in the schools, including the activities of grade and special teachers, physicians, nurses and children, cannot be fully effective unless integrated with the life in the home and the community and the educational forces in both, such as parents, physicians, visiting nurses and all other agencies."

Thousands of schools are now putting such principles into practice, in part at least. Progress seems rapid indeed when a program based on the principles is compared with the program of only a few years ago, consisting of instruction in physiology and anatomy. Now we find that the Modern Health Crusade has proved beyond doubt the value of interesting children in the formation of health habits. The program has also been expanded to include instruction in community hygiene.

### The Formation of Good Health Habits

Of these three phases of the program, the slowest to develop has doubtless been the instruction in personal hygiene leading to the formation of good health habits. The reasons for this were recently stated by Charles M. DeForest, Crusader Executive of the National Tuberculosis Association.

"The chief cause," he says, "is that health instruction has failed to interest the children's will. We all know that the way to interest will be to create practical interest. It has been experimentally shown that the child is not interested in health in the abstract or as a future beneficial state. When a child is interested in health it is in order to play and do things. Children must be *indirectly* interested or motivated to put into practice the health teachings of the schools.

"Furthermore, interest must last long enough for the child to repeat each good health practice until it becomes a lifelong habit.

"Fortunately, ways of interesting the child and keeping his will busy have been discovered. They are based on these principles: Every child wants to play. Every child wants to grow. He likes to come up to a record. He likes to play he is grown and doing something worthy of a grown person. Competition and imitation actuate him. He likes to possess tokens of accomplishment and position. Also, he is tremendously interested in pictures."

The Modern Health Crusade having been based on these principles has enrolled over 6,000,000 children who are doing the health duties or chores listed on the chore record. It makes a game of health; it gives the children the will to apply the rules of the game; it provides repetition of hygienic duties; it permits of competition between individuals, rooms or schools, and at the end of the contest it supplies rewards for accomplishment.

It should be realized that the Crusade does more than merely offer a system of acquiring health habits. The fundamental or necessary part of the Crusade program is primarily concerned with health habits, but the optional parts, including the organization of local legions of crusaders, give opportunity to teach physiology, to give instruction regarding contagious and communicable diseases, and to show the children how they can help to improve their school and community environment.

### Other Parts of the Program

Within the time limits only brief mention can be made of other parts of the program. Can there be any question as to the desirability of such measures as a thorough physical examination of children on entering school; weighing and measuring children regularly; interesting the adults of the community, especially the parents, who can render assistance in the home; the development of games and athletic activities out of doors—all of which may be held up to the children through the advanced program of the Crusade (the order of the Round Table); the employment of school physicians and nurses who can devote ample time both to prevention and treatment; and the arrangement of the courses of instruction so that, as stated in the fundamental principles already noted, "each subject and activity will contribute its appropriate part to education in health."

Last night in telling about President Harding there was part of the story which I didn't tell. After President Harding had presented the cup he said he would be glad to go outside and have his picture taken. Mr. DeForest pulled out of his pocket one of the chore sheets and said to the President, "When you were a boy, did you like to do those chores?" The President said, "I will have to confess that I did not." There, it seems to me, is the crux of the Crusade. We have a repetition of the chores each day and the giving of the reward for doing it.

### Sub-Normal Children

So far nothing has been said, except in the fundamental principles, regarding the necessity for special measures to meet the needs of the sub-normal child. For special cases, open window rooms and open-air schools should be provided. There should be nutrition classes and clinics for the malnourished. It must not be forgotten, however, that these children also need health training and instruction. The Modern Health Crusade, for instance, is promoting nutrition work wherever the system is used.

The health program is a part of the required course of study. It goes without saying, that a health program for schools should be carried out as a part of the required course of study. Many States have already adopted a comprehensive course of instruction for all schools. Included in this number are nine States in which the Crusade is used as the system of health training.

These States are Maine, Alabama, Tennessee, Indiana, Kentucky, Iowa, Utah, Wyoming, and Idaho.

Let us hope that the time will soon come when the matter of the formation of good health habits will be presented to every school child in the United States as one of the most important and interesting parts of elementary education.

## The Habit of Good Health and the Importance of Nutrition in the Modern Health Crusade Program

By MRS. BLANCHE TOWNSEND LAMB, R.N., *City School Nurse, Greensboro, N. C.*

(Read before the Annual Meeting of the North Carolina Tuberculosis Association in its Section on the Modern Health Crusade.)

SOME one has said "That the old idea that health is something given or withheld from us by Providence is fast passing." We know that in order to be healthful we must obey the laws of health.

There are in Greensboro three school nurses trying to show the school children the road to health and happiness. The most fundamental health laws relate to proper diet, fresh air, rest, cleanliness, and exercise. It is our plan to make the child desire health, not merely for its own sake, but because it points the way to success in after life. Through talks by teachers and nurses, every effort is being made in the classroom to have the children drink more milk and eat the proper food; and in order to stimulate an interest and develop health habits, the Modern Health Crusade Movement was used in the third grades. The effect was wonderful. In a week's time the appearance of the children had improved and a classroom inspection showed that 90 per cent of the pupils in the third grades were brushing their teeth regularly. The change was so noticeable that the physicians making inspection commented on the general appearance of the children.

It is our plan this year to have Health Clubs in the first, second, third

and fourth grades. With the clubs we hope to have a graduation of rules which will be appropriate to the ages of the children.

A survey of a grade of children who were Crusaders last year shows that in nearly every instance the children continued their health chores during the summer months.

Talks were made by the nurses on each of the eleven chores. Last year Health Day was observed and essays on health were written, read and discussed as a part of literature classroom work. This year prizes will be given during Children's Week for the best essays on Health. The list of topics will include Personal Hygiene and Home Sanitation.

A classroom inspection is made each month in all primary and grammar grades, and often the nurse is greeted with, "My hands are clean this time"; "I don't bite my nails"; and "I never put my pencil in my mouth any more." Gradually the children are being educated in personal hygiene.

In every public school a considerable group of children are suffering from malnutrition, and our schools are no exception to the rule. It is our purpose to weigh and measure every child in the city schools. The plan of procedure is as follows: Height and

weight to be recorded by nurse the first month, thereafter to be recorded monthly by classroom teacher up to and including the seventh grade, semi-annually in the high school. A record is made on report card of normal and actual weight, which goes into the home each month, and the normal weight of each malnourished child is recorded on the health card before the doctor makes the routine inspection. Each child seven or more pounds underweight receives a home visit by the nurse, advising examination by the family physician, rest periods, milk, taking into consideration the sanitation and health conditions of the home, and if necessary trying to suggest in a tactful way changes that will improve home conditions.

Children who had never given a thought to personal hygiene or diet were willing to give up all-day suckers, dill pickles, and were asking for "large bowls of oatmeal and four glasses of milk each day" in order to become normal in weight. The majority of our underweight pupils were given rest periods in the home after school, although a few were taken out of school and given a complete rest cure, as, for example, the case of Mary B—, age 11 years; weight 60 pounds—eleven pounds underweight. She was given a complete rest cure for six months and is entering school this fall with a gain of forty pounds.

Underweight pupils who cannot afford to pay for school lunches are given free food, entirely unknown to the other children.

This term we plan to have the mothers of underweight pupils meet with the doctor as often as possible, and especially the mothers of pupils who cannot or will not consult their family physician.

There has been a marked improvement in nutrition, as the following figures will show: In September, 1920, 513 underweight pupils were found in the white schools up to the eighth grade. A survey was made in May, 1921, and only 183 underweight pupils

were found, showing a wonderful gain for the year.

The following story will illustrate the interest of the negro pupils: A pupil working in a white home in the city said to her mistress: "Miss Alice, you ain't feeding me right. That school nurse said I ought to eat oatmeal, eggs, and drink milk." In relating the story, Miss Alice said, "I don't mind the oatmeal, but hold up on the 22-cent milk and the 6-cent egg during the high cost of living."

The most important way of stopping tuberculosis is by helping people to keep their bodies in a generally vigorous state of health, so that when the germ of tuberculosis comes along it cannot gain a foothold. Realizing this the District Nurse and Relief Committee is paying a portion of the school nurses' salaries from receipts from the sale of Tuberculosis Christmas Seals, in order that they may give a course of lectures on cure and prevention of tuberculosis in the city schools. Last year 120 talks were made in the white schools and 95 were made in the negro schools. Last year our number of pupils with a definite diagnosis of tuberculosis numbered ten. Six of these were in the colored schools and four in the white schools. All were persuaded to take the treatment for tuberculosis. Three of the white children are back in school this fall, one with a certificate from the doctor for a limited amount of work, and the other two with a full school day. If it had been possible to keep a record of the sale of Christmas Seals to children I feel sure that Greensboro's school children would have made the record as "Going over the top."

There seems no end to the work that can be done in public schools, and I feel sure that Greensboro is making a good beginning and trying to do its share in stamping out tuberculosis, by weighing and measuring its school children each month, by careful physical inspections, by teaching personal hygiene and proper health habits, and by trying to make its pupils physically fit to resist disease.

## Making Health Chores Popular

By MRS. DOROTHY HAYDEN, *Guilford County Public Health Nurse, Greensboro*

(Read at the Annual Meeting of the North Carolina Tuberculosis Association in its Section on the Modern Health Crusade.)

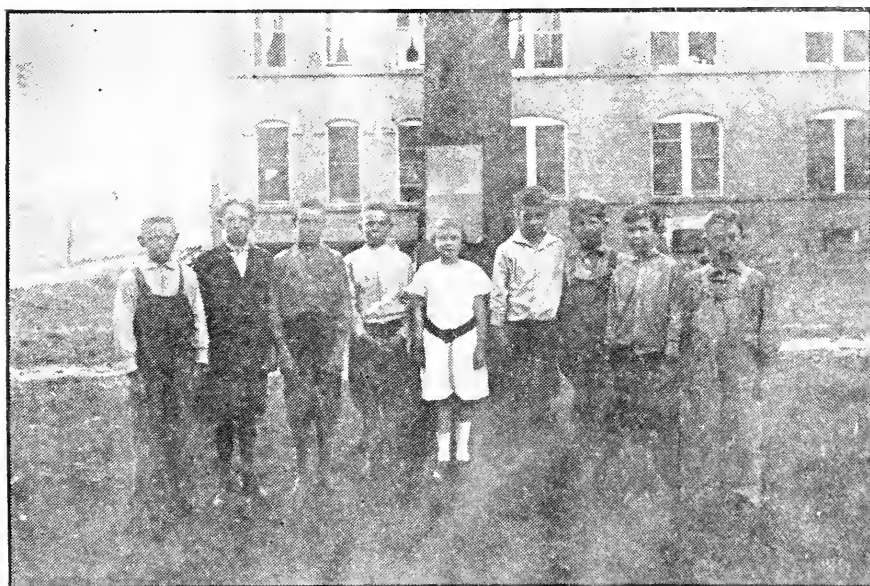
MAY I tell you of one definite piece of work developed in Guilford County by Guilford County people?

The Health posters on exhibition here were made at Guilford College Graded School. Nine gold star pupils from a nutrition class of forty-two made these Health posters, the photographs of the children are beneath the exhibit.

of being that nurse); weighed and measured the entire forty-two, visited the homes of the under-nourished, talked with the mothers about foods and remedial physical defects.

The Modern Health Crusade was given these disciples of health with the most illuminating results.

We find children of this age enthusiastic in performing the eleven health



Modern health crusaders, Gold Star winners, Guilford College Graded School.  
These children are normal in weight.

We are very proud that the STATE HEALTH BULLETIN (Raleigh) for April used this picture as a frontispiece. This class, the fourth grade, was adopted by the four seniors of the Domestic Science Department of Guilford College, and these young ladies made the physical inspection under the direction of the Guilford County Public Health Nurse (I have the honor

chores, which are presented to them in the form of play, a game.

Johnny, who was never known to wash and comb without an argument, or maybe something more persuasive, will, to please his teacher, come to school washed, brushed and shining. One health chore relates to sleeping *in bed ten hours*. A little girl came to school one day crying as if her heart

would break. The teacher inquired "What is the matter?" The little girl replied, "I can't check off chore No. 7. It says *'ten hours in bed last night,'* and I fell out of bed and didn't wake up."

The teacher is often called upon to settle a point of honor. One teacher divides her room into two teams. A girl named Lillie was the captain of one team; a boy named Mike the captain of the other. Lillie was the only child of fond parents and a little spoiled; she insisted it wasn't fair for there to be fewer hands to wash in Mike's team than in her own. Mike had had one hand amputated, so the teacher explained to Lillie that in her team there were fewer teeth to brush as more teeth in her team had been shed.

The children are enthusiastic in keeping the rules of the health game, even to giving up such foods as cheap candy, coffee, tea, etc. In one of the Guilford schools a teacher said to her class of forty one morning: "How

many little girls and boys in the class drank coffee for breakfast?" The hand of one little girl went up. "Well," said the teacher, "I am going to put names of all the little boys and little girls who didn't drink coffee this morning on the board and call it the honor roll." Instantly this little girl became excited and, holding up her hand, began crying, "Teacher! Teacher! My name belongs on the board. My name belongs on the honor roll!" "But," said the teacher, "you admit you drank coffee this morning." "Yes, teacher," replied the little girl, "but I threw it up coming to school."

This course, the Modern Health Crusade, is appreciated by the parents, and while they many times do not keep the rules of the game, they do co-operate with us in providing tooth brushes, dentrifices, and plain, nourishing food at regular hours.

By this plan, if we can teach our tomorrow's citizens the prevention of disease and community responsibility, we feel our time is well spent.

## Teaching Health With the Movies

By A. W. SNOW

**V**ISUAL methods of teaching good health by means of moving pictures continue to be a drawing card in North Carolina. Two years

service has been given in 45 counties in North Carolina and has been a very valuable means of teaching facts regarding the care and prevention of tuberculosis and other diseases.

Over-crowded living conditions furnish the breeding ground for disease and until we can instill into the colored population a love for fresh air and cleanliness, homes such as the one shown opposite will exist.

This converted tobacco barn, located in Pender County, is occupied by seven. The kitchen is used as a sleeping room and the single window remains closed all the time. Correcting conditions such as this is preventing tuberculosis and is part of the work of the North Carolina Tuberculosis Association made possible by the sale of seals. Contrast this hovel with the clean, spacious and well ventilated home of Andrew Howell (colored), of Antioch community,



A home in Pender County in which seven live.

ago the North Carolina Tuberculosis Association fitted up a Dodge truck for showing health educational moving pictures to the negroes. This

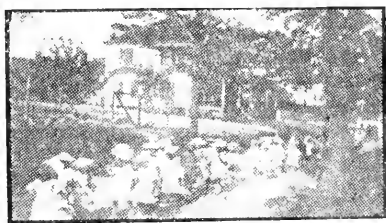


Granville County, who is raising his family by the rule that is next to godliness. Of course all colored people in North Carolina cannot have such large, well equipped homes as this, but every one can have plenty of windows in the home and they can be kept open day and night.



Antioch Community, Granville County, home of Andrew Howell. Educated, two; two are in school now. Nice farm of seventy-seven acres of improved land.

We may confidently expect the next generation to be more thoroughly grounded in the laws of health. Look at this procession of "pickaninnies" on their way to see the health pictures, where they will be instructed in the rudiments of good



School children in Durham marching to the park for an outdoor exercise.

health and see by the pictures the proper and improper way of living, with the reward and penalty of each way.

The group of colored boys in Gaston County shown here have just

seen the health-car exhibition, which they helped purchase by selling Christmas seals last year.

It is very important to the white people of North Carolina that these colored children, and older people, too, should be educated to protect themselves against infection from



People gathering for afternoon entertainment in Gaston County.

disease, and especially tuberculosis. Tuberculosis is very fatal to the negro. He does not seem to have set up the racial resistance to the disease that the white man has, and easily falls victim, and unless given attention early will succumb to the disease. During the period that the disease is in an infectious stage and before it is apparent to everyone that he has tuberculosis, he is in daily contact with others, both white and colored, often in the home as a domestic servant or in close contact with children. If for no other reason than that of self-preservation, we should see that the tuberculous negro receives treatment, if curable, and if beyond hope of recovery that a place is provided where he can be supervised so he will not communicate the disease to others.

With a population of 763,000 negroes we have more deaths among them from tuberculosis (1,459 last year) than we do among the whites with a population of 1,783,000. The negro tuberculosis problem is one of the State's great health problems at this time, and to arrive at a solution of the problem will require the same energy and thoroughness that characterizes the citizens of North Carolina when they are aroused to the necessity of action.

## A Few Reasons Why We Need to Continue Tuberculosis Work

(Extracts from letters received from County Welfare Officers, citing specific cases in their counties.)

### Rowan County Wants Tuberculosis Sanatorium

"The tuberculosis situation in Rowan County with both white and black is such that the county is seriously considering the establishment of a tuberculosis hospital. The danger to people who not only cook and eat in a room with tuberculous patients but also take in washing, has aroused the public. This condition has been found in Salisbury and in the county, in unscreened houses.

### Nurses Needed

"The difficulty in getting a nurse for tuberculous patients is constantly met, especially in cases of extreme poverty. Recently the County Nurse and Welfare Officer went into a home of great poverty, the patient in last stages, no screens, expectorating on floor or in uncovered vessels, no disinfectants, wife cooking, washing, sleeping with patient, milking and churning and—worse yet—selling the butter to an unsuspecting public. While the patient died and all possible was done to safeguard the living, no member of the family so far has agreed to a medical examination. With proper facilities to handle this case and the necessary legislation to enforce an examination, this family could be saved. . . . The tuberculosis inspection of cattle will help, and in connection with the above case the Welfare Officer and Nurse stopped the sale of butter and the cow is to be examined.

### No Place to Go But County Home

"A mother with long-standing case of tuberculosis was deserted by son and family, and left alone in a house three-quarters of a mile from any neighbor. No relative would receive her, no one would stay with her. She was brought to town, placed in the

care of a woman. But the neighbors objected to their unsanitary methods and a tuberculous patient so near. The County Home, although unprepared for her, was the only place to take her. Here she will end her days, unhappy, and a menace to the other inmates. A tuberculosis hospital would solve the difficulty."

### Tuberculosis Increasing in This County

"The disease is increasing rather alarmingly in our county. I have been able to handle only one case satisfactorily, that of a young girl whom I placed in Grace Hospital in June. She is improving nicely. I have had two cases of men with families that are practically helpless, but so far have not been able to do much towards solving their problems. All these and several others are the results of the 'flu' epidemic of the last three winters."

### Cumberland County People Love to Assist

"The Superintendent of Public Welfare has succeeded in getting the community of Linden to aid him in caring for a woman who has tuberculosis. They built an open-air room for her. The owner of a sawmill furnished 1,000 feet of lumber, a merchant gave all the nails needed for it, and other merchants gave other articles needed for the room. The community at large is to help take care of the four children. The County Health Officer will give medical treatment, and the Superintendent of Public Welfare will keep in touch with other needs. The people are delighted to assist in this work and are showing a personal interest in it.

"Our Welfare Organization helped send one girl to the State Sanatorium.

We have assisted in screening porches, buying sputum cups, and furnishing milk to the sick and to undernourished children. Last winter we aided one elderly man, suffering from tuberculosis. I procured admission for him to the County Home, and we bought shades and screens for his room, a new stove, and helped to make him comfortable. He had known better days and was once a county commissioner. I have served for the past two years as chairman of the county committee in charge of the sale of Christmas seals for aid of tuberculosis work.

#### **Need for Medical Supervision After Patient is Discharged from Sanatorium**

"There is a case in Fayetteville of a man who has just returned from the State Sanatorium. He worked too much and has a return of his trouble. The Methodist Church has appointed a committee to look after this case, and they were raising money to send him back to the hospital and keep him there as long as necessary."

#### **Indigent Colored Patients Are Great Problem**

"We have always kept in close touch with our county physician, and with our county nurse, but despite this fact we are often called upon to deal with tuberculous patients who have other troubles—and then is when complications arise. I remember especially a case we had several months ago. A colored woman was confined in our county jail. The sentence was several months. She began having hemorrhages. She had no people who would consent to take her into their home; in fact, a sister told me if I brought her there she would leave and go to parts unknown. Our county officer could not get her in the County Home, for there was no place there to put her. Finally one good old colored woman said she would take her if the people would feed her. This old woman did the best she could, but the girl lingered on and on, and finally the people got tired of feeding her and this woman had the whole burden to bear. She had no screens and flies simply swarmed into the room.

#### **Mother Kills Self and Brother**

"At H—— we had a case of a mother with three small children. She was living with her mother. Seven people slept in one room with this tuberculous woman. We did all we could to get things adjusted, to send the woman to a tuberculous home or the children away, but they were cranky people and nothing could be done. After lingering a long while the mother died. Two weeks ago a brother died, and it now appears the woman's mother will die with the same disease and practically all the family will be on the hands of some charitable organization."

#### **Father Drives Daughter Out to Die**

"Just this week I have been called to J—— and found a feeble-minded woman pregnant and tuberculosis active in her left lung. We had one case of a girl who had been driven away from home by her father and had been taken in by a woman who was mentally deficient. The woman had only one room and one bed, and when we visited the home we found the girl on a bundle of rags in a corner. The room was literally alive with flies. The girl was too weak to move, so when she expectorated the walls or floors were used. In this room were three or four baskets of clothes waiting to be sent to white homes. The woman took in washing for a living."

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There was a young lady named Mazy,  
Whom some people thought was quite  
lazy;

But if she'd told them, you see,  
That she had had the T. B.,  
Then they'd have thought she was  
crazy.

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All the cases discharged from the North Carolina Sanatorium as "arrested" since it was established are living and working today. Write the Bureau of Tuberculosis, Sanatorium, N. C., if you want instructions on how to rest and get well of tuberculosis.

## The Relation of Public Health Nursing to Tuberculosis in North Carolina

By ROSE M. EHRENFELD, R.N.

**PUBLIC HEALTH NURSING** in North Carolina features in both the cure and prevention of tuberculosis, as well as in the tuberculosis educational program.

Institutional and private duty nurses serve the fortunate few who find places in hospitals and sanatoria or are financially able to have institutional or private care. Public health nursing, being primarily educational and preventative, serves the **unfortunate many**, denied such advantages. Provision for complete supervision over the whole of the sick life of the consumptive is **essential**—whether he be trending towards complete recovery or towards death—and all three types of nursing are necessary. The preventative and educational work of the public health nurse, however, represents the “stitch in time” and the nurse the most effective worker in bringing the public and the medical profession closer together. Let us consider—(a) **The public health nurse as an educator.** As such she is responsible:

1st. For changing the attitude of the public towards tuberculosis. The one-time tendency to resent a diagnosis, or any insinuation of their having tuberculosis, must be changed. In its place must come a desire on the part of the public to know the truth and face it bravely.

2d. For making known generally the predisposing causes of tuberculosis and also the indications or early symptoms of the disease.

3d. For advocating, where at all possible, a period of institutional care. Also, for overcoming local prejudice to hospitals.

4th. For educating the public to periodical examinations and medical supervision when institutional care is not possible.

5th. For discouraging any tendency to leave the Old North State in vain quest for better climate—none

better can be found. Even if it were possible, there is danger of distance from home, family and accustomed environment and the mental anxiety caused thereby offsetting any such advantage.

(a) **The public health nurse's greatest value in the tuberculosis program** is as an educator, and as such she should line up with the educational system of the State and become responsible for enrolling every school child in her jurisdiction as a Modern Health Crusader; also, offer her assistance to the physician examining teachers who apply for the health certificates required by law.

(b) **The public health nurse in the field of prevention:**

The object of all anti-tuberculosis measures is the building of bodily resistance to tuberculosis. The public health nurse has possibly the advantage over other health workers when it comes to **prevention**. She it is who has access to a greater number of homes. This affords opportunity to observe and correct predisposing causes and environmental conditions that threaten child life from tuberculosis. Dr. Alfred Hess at a recent meeting at the New York Academy of Medicine called attention to the fact that studies of death from tuberculosis in children show two danger periods of childhood, viz., under one year and from 10 to 14 years.

1. The public health nurse who has safeguarded the mother through a period of pregnancy is the one whose advice regarding the baby is most frequently sought—and followed. Can we estimate her value in the field of prevention when we think of even one infant being successfully taken from the breast of a tuberculous mother and being thus protected during the early and most susceptible period of life?

2. Neither can we estimate to what extent the pasteurization of milk as

taught by the public health nurse in the home has prevented the possibility of bovine infection, the most common form of tuberculosis in children.

3. The Modern Health Crusade as a preventative measure can readily be seen, intended as it is for school children who come within the second age group described by Dr. Hess as a danger period of childhood.

4. Locating tuberculosis suspects of all ages and checking possibility of further development is one of the preventative measures that the 25 Red Cross county nurses under the supervision of the Bureau of Public Health Nursing and Infant Hygiene are responsible for. They visit every reported case of tuberculosis in their county. They render valuable service to their counties by co-operating with the State Tuberculosis Association in the diagnostic clinic work. Their co-operation with this particular State agency has resulted in diagnostic clinics having been held at 86 points in 19 counties, with 2,655 chest examinations. (In five counties the number of applicants for examination necessitated a return clinic, in Gaston County a third clinic has been held, and a third is scheduled for Edgecombe.) Frequently the number examined only slightly exceeds the number turned away. **Not in the number applying for examination, however, is the true value of the clinic indicated. Its true value may best be measured in terms of the number of patients—previously without medical guidance—who, through its influence, place themselves under continuous medical supervision; such supervision involves the practice of a system of personal hygiene which protects others from infection, and as none but a regular practicing physician is recognized as competent to supervise a person in poor health, the nurse's service in following up the clinic patients is invaluable.**

5. As poverty with its associate circumstances lowers resistance, co-operating with other agencies enters into the nurse's responsibility for prevention. While the dispensing of material relief is not within the jurisdiction of a public health nurse, she notifies the proper relief agency of any such needed assistance; and the

general welfare of the patient's family, as well as that of patient, is considered.

6. In this particular disease cure and prevention are so closely related that the latter is sometimes accomplished by curative measures, for which reason it falls naturally within the duties of the public health nurse who is doing visiting work to render such bedside care as is necessary to teach by repeated demonstration the proper care of a patient in the home. Right habits in personal hygiene cannot be established until they have learned through daily practice what is meant by "taking the cure" and by "sanitary precaution for others." Bedside care must of necessity be a limited activity of a county nurse, but she teaches "cause and transmission of disease" and how to care for the sick in their home. As home hygiene has such a direct bearing on the prevention of tuberculosis, a course in Home Hygiene and Care of the Sick might be considered as definite a tuberculosis preventive measure as the Modern Health Crusade.

7. Although an almost ideal climate, one important preventative feature (conspicuous for its absence in North Carolina) is the open-air school or preventorium. The nurses throughout the State doing nutritional work among school children feel the need for active co-operation on the part of lay people and school authorities for open-air schools. I recently saw some temporary buildings about completed that inspired a thought of how fortunate were the children who had been "crowded out" and would in these temporary buildings have a chance for health more in proportion to their opportunity for education.

The field of hospital social service is yet to be developed. Nurses are needed to follow up ex-sanatoria and hospital patients. All too frequently does a patient return, after a period of sanatorium care, with the best intentions of continuing the cure, but fails in the home environment. The nurse is necessary to encourage the patient and interpret to the family what is meant by rest, proper diet, etc., so necessary if the good results are to last and a second breakdown prevented.

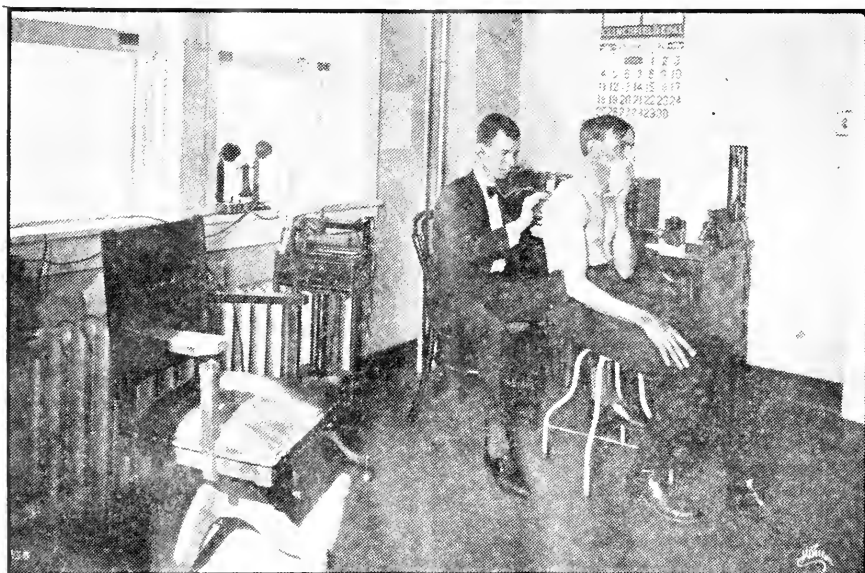
I believe a definite responsibility of the public health nurses is to stimulate the interest of non-professional people and agencies in the tuberculosis program, which is one especially adapted for their participation. The nurse should be responsible herself for work that only a nurse can do. Lay people can put over the seal sale, put on public health playlets, do a great deal in the educational pro-

gram, and teachers can carry the greater part of the Crusade work. The tuberculosis situation is such that challenges the medical and nursing professions as well as all other agencies in the State, and how well it will be met depends upon the reaction of each to the opportunity that is theirs, and the extent to which each feels and fulfills its obligation for reducing tuberculosis in the State.

## Making Physical Examination Properly

THERE are two ways to make an examination for tuberculosis: the right way and the wrong way. The picture below shows the proper way as regards the patient's preparation.

In the very early cases it is sometimes days before a correct diagnosis can be made, as it is often necessary to employ various tests to aid the physician in his diagnosis.



Examination with stethoscope.

No examination for tuberculosis is worth the name unless the patient is stripped to the waist. The most expert tuberculosis diagnostician cannot make an examination of any value through the patient's clothing.

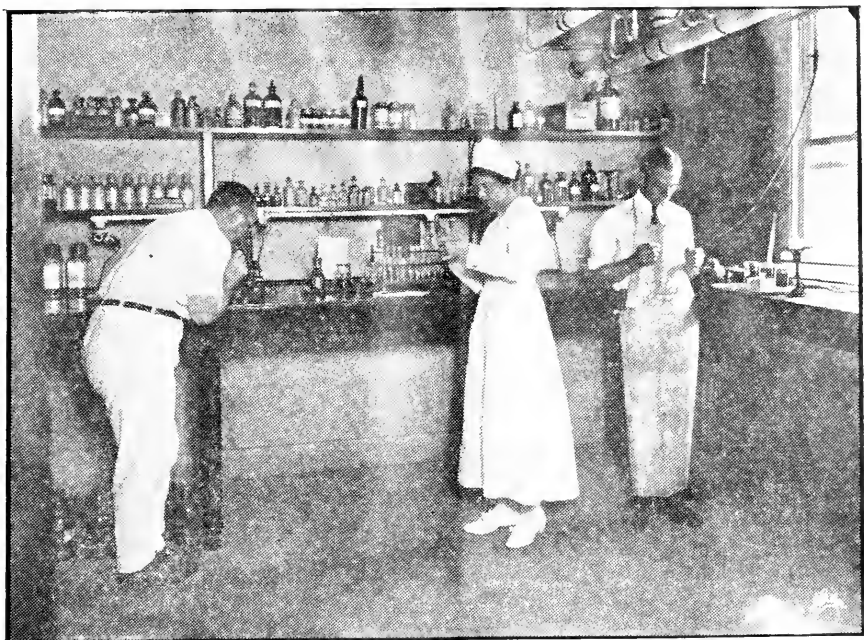
A well equipped laboratory is often of great value to the physician in making a diagnosis of tuberculosis.

The picture shows one corner of the laboratory at the North Carolina Sanatorium, where all the regular

routine tests of tuberculosis are made and where a considerable amount of research work in tuberculosis is done.

Any person in North Carolina that is suspicious that he has tuberculosis or who has been closely exposed to

tuberculosis is entitled to a thorough examination at the North Carolina Sanatorium clinic and can secure same, without charge, by addressing a request for examination to the Bureau of Tuberculosis, Sanatorium, N. C.



Laboratory examination.

## The Real Story of a "Come-Back"

By A. W. SNOW

ONE bright, sunshiny morning a few years ago a young man was sitting on a "cracker box" in front of the only pharmacy in his town, "chewing the rag" with several of the town's leading citizens, when he idly picked up a bulletin on tuberculosis issued by the State Board of Health, which was capering around at his feet in response to the whim of the wind.

The young man was not ill; at least he did not appear to be. The slight, occasional cough he had always attributed to too much cigarette smok-

ing, and the lethargy which possessed him was credited to the climate. Folks called him lazy and he had about made up his mind that they had diagnosed his condition correctly. Turning the pages of the bulletin, he found this question staring him in the face: "Do you tire easily?" Yes, certainly he did; that was just his trouble. He was always tired, not lazy. Seeking to justify his tiredness, he read further and was amazed to find that "an unwonted sense of tiredness" was likely to be a disease, and a very serious disease if not cured.

As he read on and saw mention of "hoarseness" and "absence of a keen appetite" he began to believe they were writing about him, and settled down in real earnestness to ascertain if his name were written there.

Sure enough, there it was as plain as day. Every time he saw weariness he became more tired. He jumped on the scales and found he had lost six pounds in the last two weeks. The dinner bell rang and he did not make a mad dash for the table. When he came to "blood-spitting" and "persistent pain in the chest" his hope revived somewhat, for surely he had never spit any blood or had any pain in the chest, or anywhere else for that matter. He was, however, sufficiently interested to follow the most valuable advice given in the whole bulletin, which said: "If you have any of the above symptoms, do not delay, but consult a reliable physician at once. It may mean saving your life."

He saw the physician, told him all his troubles, trials, symptoms, the history of his life and his ancestors for three generations, was stripped to the waist, pounded, thumped, made to whisper, cough, whistle and sing. At the end of approximately two hours of such methods the "reliable physician" pronounced sentence. He said: "My son, you have bugs." The young man not knowing whether he meant under the hat or under the shirt, or both, requested him to phone for the undertaker to come at

once and get his measure, for he had never known anyone to survive such a diagnosis for long. The doctor, however, would not listen. He told wonderful tales of a place located in the sandhills of North Carolina, where the weary can be made energetic, the weak made strong, and the "bugs" put to death.

This was a "reliable physician," and what's the use of having a reliable physician unless one follows his advice? So the young man journeyed to the State Sanatorium for the Cure of Tuberculosis and there commenced his fight.

One would think fighting tuberculosis in a sanatorium was a weary, dreary sort of occupation; but it was not. True, there were "blue days," but they are found in any climate under the sun, and the happy days far outnumbered the blue ones.

It was no quick job, fighting back to health. But though slow, it was sure, and today that young man is well, back at work and earning more than he ever did before having tuberculosis.

It is useless to die of tuberculosis; it is foolish. You have no right to do it. You owe it to yourself and family to live and be well, and you can do it. Check up on your condition at regular intervals and if you have any of the symptoms described in this Bulletin, consult your reliable physician, or write the Bureau of Tuberculosis, Sanatorium, N. C., for an engagement for examination.

## Notes and Gleanings From the Medical Section of the Annual Meeting of the North Carolina Tuberculosis Association

Prepared by DR. P. P. McCAIN, Sanatorium, N. C.

THE splendid medical program which was arranged by Dr. W. L. Dunn, the chairman of the section, was all the more interesting because every speaker was present and every paper was presented. The free discussions by so many of those present were also most instructive.

In his most practical article, "Time and Tuberculosis," Dr. C. H. Cocke

emphasized the fact that though tuberculosis has been known for thousands of years, time has found no medicinal cure but has taught us that the one thing necessary in order to be cured is rest. Rest does not mean the taking of a vacation to be spent in hunting, fishing, visiting, riding around or loafing about. It means absolute rest in bed all day



until all active symptoms have subsided, and then a period of months of combined chair and bed rest, with possibly a little exercise as prescribed by the physician in charge. One who is thus "taking the cure" is not idle and is not losing time from his business, but he is really accomplishing more than he has ever done in the same length of time. He is regaining his health and adding scores of years to his life. If begun early enough and continued long enough, rest will effect a cure.

\* \* \*

Dr. O. L. Miller, who is the physician in charge of the new State Hospital for Crippled Children at Gastonia, read a most instructive paper on "The Diagnosis and Treatment of Joint Tuberculosis in Children." He is a recognized authority in this line of work and the State should be proud both of its new hospital and the man in charge of it.

Dr. Miller is equipped to give sun baths, X-ray and all other forms of treatment. All who have crippled children will do well to write him.

\* \* \*

Dr. Frederick M. Hanes discussed in his usual thorough manner the timely subject of "Tuberculosis and Hyperthyroidism." Hyperthyroidism is a diseased condition of the thyroid gland, often spoken of as toxic goiter. The symptoms of this condition are similar in many respects to those of tuberculosis. In all doubtful cases this needs to be ruled out before making a definite diagnosis of tuberculosis. As brought out by Dr. Hanes and others discussing his paper, certain recently developed laboratory tests are quite a help in differentiating the two conditions.

These tests, the determination of the rate of metabolism and the amount of sugar in the blood, are regularly employed at the Sanatorium in all questionable cases.

\* \* \*

A preliminary report on some research work being done at the Sanatorium on the treatment of pulmonary hemorrhage by reducing the coagulation time of the blood through the use of a hemostatic serum and by X-raying the spleen, was presented by Drs. L. B. and R. A. McBrayer and

P. P. McCain of the Sanatorium staff. The funds for this work are provided by the State Tuberculosis Association. The results thus far obtained seem to give promise of something of practical value in the treatment of this very frequent and distressing symptom of tuberculosis.

\* \* \*

Dr. Charles L. Montgomery, Chief of the Medical Service, U. S. P. H. S. Hospital at Oteen, read a most interesting paper on what government, through the Public Health Service, is doing for its tuberculous ex-service men. Dr. Montgomery is not only one of the best trained tuberculosis specialists, but he is also a man of deep sympathy and broad vision, and he has had no small part in making Oteen probably the most desirable of all the Public Health Service Hospitals.

\* \* \*

Dr. Joseph B. Greene, of Asheville, read a most important paper on "Tuberculosis of the Larynx." He has probably had as much or more experience and has been more successful in treating tuberculosis of the throat than any man in the South. He emphasized the fact that tuberculosis of the throat is nearly always secondary to tuberculosis of the lungs, and that it can be prevented by the exercise of proper precautions. But even after it has developed, most cases can be cured. To effect a cure the most important essential is rest of the voice.

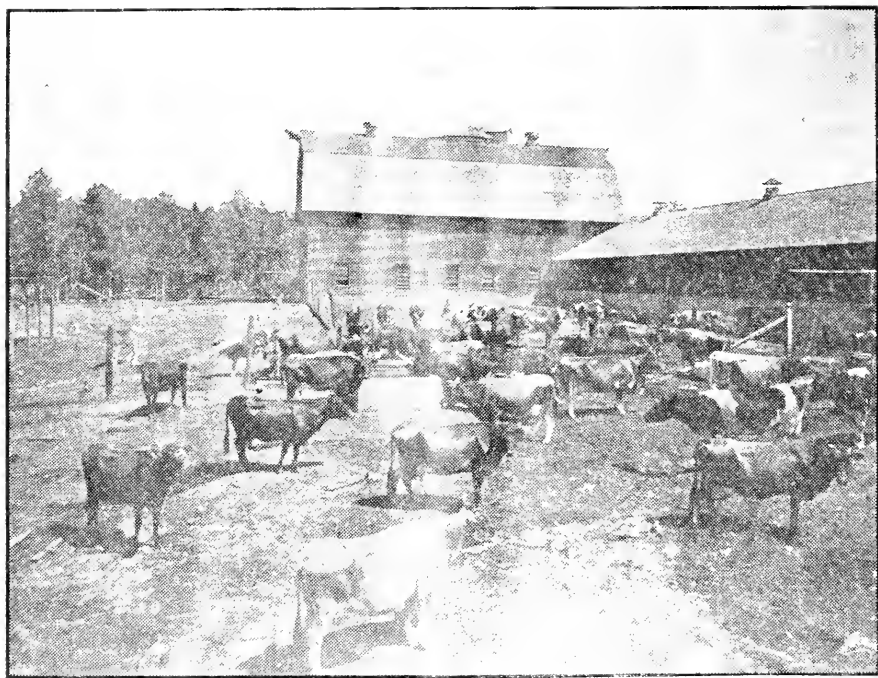
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Dr. C. H. Cocke, of Asheville, among other things, said:

"Any physician unfamiliar with the finer diagnostic points and manifestations of tuberculosis and the effect of tuberculin upon it should never attempt the therapeutic administration of tuberculin."

Concerning the patient he said: "Worry, anger, emotion, too eager interest in outside affairs, as well as too insistent but irritating zeal and anxiety on the part of members of the family, have spoiled many a man's chances of arresting his tuberculosis."

"In tuberculosis there is no greater fallacy than that the patient is as well as he feels."



On June 30, 1920, there were but eight states in the Union having more accredited herds of cattle than North Carolina. By accredited herd we mean that all the cattle of the herd have been tested twice annually or three times semi-annually for tuberculosis and found free of the disease. There were 105 accredited herds in the State on the above date, and the number is rapidly increasing, as is shown by the report which indicates that 1,045 herds in the State have been once-tested herds.

This speaks well for North Carolina. Milk is the most important item of diet, and milk from tuberculous cows is dangerous, especially to children.

If your milk is not secured from an accredited herd, it is well to follow the advice of Professor Nocard, given at the British Congress on Tuberculosis in 1902. The advice is still good. He said: "Mothers of families, do not give milk to your children without having it boiled." It is fortunate that only about two per cent of the cattle are infected with tuberculosis, but the cow from which your milk is obtained may be one of this two per cent unless you have official assurance to the contrary.

The herd shown above is an accredited herd. It is the herd at the North Carolina Sanatorium from which milk to supply the patients is obtained, and better milk there is none.

A. W. S.

## The Tuberculosis Clinic

By J. L. SPRUILL, M.D., *Director of Clinics for the North Carolina Tuberculosis Association*

(Read before the annual meeting of the North Carolina Tuberculosis Association in the Sociological Section, Greensboro, N. C., October 7, 1921)

IN its final analysis the objective of the tuberculosis diagnostic clinic, as conducted by the North Carolina Tuberculosis Association, is to reduce the mortality and morbidity from tuberculosis.

This result is being accomplished, not alone by the tuberculosis clinics, nor by the Bureau of Tuberculosis of the State Board of Health alone, but by the combined efforts of the North Carolina Tuberculosis Association, the State Board of Health, various organizations, the local physicians, the public health nurses, and the people themselves.

The part played in this work by the tuberculosis clinic, the need for its more universal use and extension, is what I hope to focus upon your attention for a few minutes.

That the old, oft-repeated phrase, to the effect that an ounce of prevention is better than a pound of cure is especially applicable to tuberculosis infection is readily admitted by everyone, and considerable time and attention has, therefore, been given—during the clinic—to educating the people as to the nature, cause and prevention of tuberculosis.

It has been demonstrated through surveys conducted by the medical staff of the North Carolina Sanatorium that an open, active case of tuberculosis will infect eight out of ten of the immediate members of the family unless proper precautionary measures are taken. If we are ever to control tuberculosis it is imperative that educational work be given a prominent place in the clinic program—as elsewhere.

During the twenty-six clinics held under the direction of the association since May, 1920, from one to five lectures have been given at each place, setting forth in plain, simple language the safeguards against infection, and to those already infected

the precautions necessary to prevent spread of the disease to others.

In this educational work the county health officers, the public health nurses and various organizations such as the women's clubs, the Rotary and Kiwanis clubs, have given unsparingly of their time and best efforts.

You cannot, however, eradicate the tubercle bacillus from the lungs when active disease is present, and no matter how small an area may be involved or how few clinical or physical symptoms are present, unless the patient receives proper treatment under the direction of a competent physician, the chances are great that he will become not only an economic loss to the community, but a source of infection to others as well.

The busy general practitioner is often censured for not diagnosing early tuberculosis, but there is much to be said in his defense. A diagnosis of tuberculosis is not popular with the patient nor his family, though much more today than it was a few years ago, and if he is well nourished and looks fairly well it is very hard for his physician to convince him that he has tuberculosis. The clinic physician can be of assistance in these cases; the specialist would confirm the family physician's diagnosis, and the patient would not question the matter. He would then be easily controlled and not lose the valuable time in taking the cure, which might mean life or death to him. The patient is not apt to doubt the diagnosis of the specialist, and is then usually willing to take the proper treatment under his own doctor's supervision.

The pre-clinic arrangements are usually made by the health officer or the public health nurse. As the time devoted to each county usually does not exceed two weeks, and not more than sixteen examinations can be

made in one day, it has been necessary to specify a day and hour on which each patient is to report for examination.

These appointments are made by the county nurse or other person arranging for the clinic, before the examiner arrives, and while no one is refused an examination if there is an open date, the nurse endeavors to fill the list with those that have been closely exposed to tuberculosis. This applies alike to white and colored

where X-ray and laboratory equipment are available and where the Von Pirquet and subcutaneous tuberculin tests for tuberculosis may be given and such other studies made as may be necessary to arrive at a proper diagnosis.

All positive cases are carefully instructed as to treatment and referred to their family physician, who in turn secures sanatorium treatment whenever possible. If it is not possible to place all patients in a sanatorium,



Patients reporting for examination for the Tuberculosis Clinic held in Surry County. Dr. Spruill, physician; Dr. Williams, health officer, and the County Public Health Nurse at the right. This clinic ran for twelve days, making one hundred and fifty-seven examinations for tuberculosis.

patients, a special day usually being given over to the examination of colored patients. The nurse is furnished a list of those in her county dying from tuberculosis within the last year, and also a list of all the reported cases. The families are then visited and each member offered the opportunity for a thorough examination, without charge. All physicians in the county are advised at least two weeks prior to the clinic, the dates on which examinations will be made, and invited to bring all doubtful cases for examination. If definite diagnosis is then not possible, the patient is referred to the State Sanatorium Clinic,

the best home treatment obtainable is furnished.

We see many undernourished children at these clinics, and in many of these cases find diseased tonsils and adenoids. Their parents are advised to have these defects corrected and extra nourishment is recommended. Children of this type provide the breeding ground for disease, and no more important work can be done in this field than getting them in condition to resist infection, which means properly nourished. Cases that are negative to tuberculosis but are in a "run-down condition" are very susceptible to infection, and great care is

taken to advise this class that while they have no active tuberculosis at present, unless they improve their condition by proper rest and nourishment they will not be able to resist tuberculosis and other infections.

Valuable opportunity is offered at these clinics for interesting the people in county sanatoria—especially for the care of their indigent, far-advanced cases. Some little progress has been made in this direction.

These clinics are available at any point in North Carolina where six or more desiring an examination may be gathered, and the North Carolina Tuberculosis Association, Sanatorium, N. C., will be glad to make an engagement with the county health officer, the public health nurse, the superintendent of public welfare, the local physician, or others sufficiently interested to make the preliminary arrangements for the clinic.

The slogan of all tuberculosis workers in North Carolina is: Every citizen of North Carolina has a right to know if he has tuberculosis, to be properly treated for it, and to be so supervised that he will not communicate the disease to others. This clinic is an endeavor to carry out the first phrase in this slogan, to wit, "Every citizen of North Carolina has a right to know if he has tuberculosis." This is one of the important things in the treatment and cure of

tuberculosis, finding out that one has it while it can be cured—it has been wisely said that this is the first step. The North Carolina Tuberculosis Association knows how little it is doing with one clinic physician; it hopes to put on another as soon as funds are at its command—it hopes that this work will so impress the people of each and every county in North Carolina that they will establish a permanent tuberculosis clinic in every town and county in the State, and that a county sanatorium or hospital for the treatment of tuberculosis will soon follow, and then the North Carolina Tuberculosis Association would turn its clinics into a consultation service for these clinics and for the physicians.

#### Organization of clinic:

(1) Director of clinics and clinic physician, Dr. J. L. Spruill, furnished by the North Carolina Tuberculosis Association, financed by the sale of Tuberculosis Christmas Seals.

(2) Attending public health nurse, Miss Marion Manning, furnished by the Bureau of Public Health Nursing and Infant Hygiene of the State Board of Health, in co-operation with the American Red Cross.

(3) The county health officer, public health nurse, superintendent of public welfare, physicians of the county, and others.

### IN CASE OF CONSUMPTION, LOOK TO THESE FOR CURE



THE DOCTOR.



SUNLIGHT.



OUT-DOOR AIR.



GOOD FOOD.



REST.

NEW YORK STATE DEPARTMENT OF HEALTH

# DAILY HEALTH GUIDE

FOR

## BOYS AND GIRLS

### MORNING

*Brush teeth—Toilet*

### BREAKFAST

Fruit, cereals and plenty of milk, eggs, bread and butter

No coffee nor tea at any meals  
*Eat slowly, walk to school. (Don't run.)*

### SCHOOL

GOING and COMING

Take ten deep breaths slowly, shoulders straight and head up.

*Don't sneeze near another person.  
Use your handkerchief. Don't spit.*

### NOON

*Wash your hands and face; use soap.  
Glass of water before eating*

### DINNER

Besides meat and potatoes, or rice, eat plenty of vegetables and only plain puddings or fruits.  
Chew each mouthful thoroughly.

### AFTERNOON

*Walk slowly after eating. Keep cheerful.  
Play out of doors after school.*

### EVENING

*Wash Face and Hands. Glass of water*

### SUPPER

Plenty of milk and fruits and fish or eggs instead of meat.

Fried foods are hard to digest.

### WINDOWS OPEN

*Top and bottom*

**SLEEP OUT OF DOORS WHEN YOU CAN.**



**UP SMILING**  
No loitering  
in dressing or  
chores



**RECESS**  
Play hard.  
Put nothing dirty  
in your mouth.



**EARLY TO BED**  
12 hours sleep for  
young children,  
ten for all others



**A GOOD WASH**  
Before breakfast.  
Brush your teeth.



**FRESH AIR**  
Study hard.  
Sit up straight  
at your desk.



**GLASS OF WATER**  
Brush Teeth.  
A hot bath  
twice a week

ISSUED BY THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS, 106 E. 22nd ST. NEW YORK.

Adapted by the National Tuberculosis Association from the "Daily Program" chart of the Wisconsin Anti-Tuberculosis Association.

Is there a "Daily Program" hanging in your school room?  
If not, why not?



## “That Will Keep Us On the Job”

“—and it’s up to you and me to back this disease-fighting crusade as best we can.

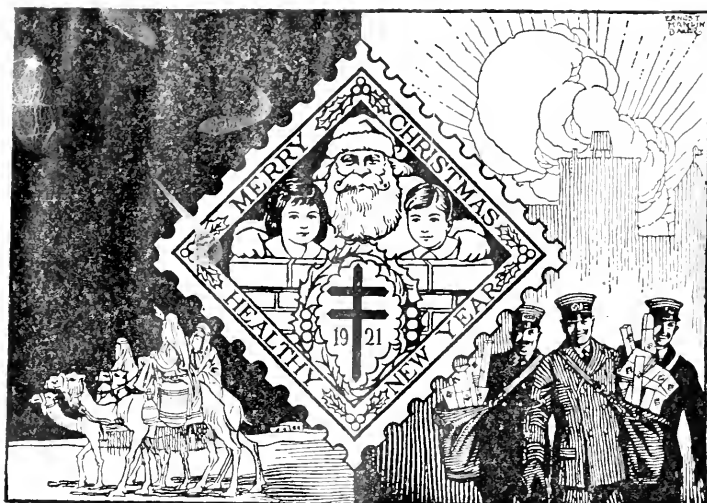
“It’s just such fellows as ourselves who benefit by the sale of Tuberculosis Christmas Seals. When you realize that an average of two out of every hundred men working in shops have broken down or will break down with tuberculosis, you will begin to understand why it’s mighty important to us that these Christmas Seals be used.

“No matter where you work, there is a state or local tuberculosis association near by that is working all the time to protect you against this dread disease.

“Tell all of the other men and tell them to tell everyone they know.”

your  
Christmas Seal  Christmas Mail

The National, State and Local Tuberculosis Associations of the United States



## Bearers of Gifts and Bearers of Health

As the wise men of old went forth with their gifts, just so is the spirit of human helpfulness conveyed by the carriers of Christmas Sealed Christmas mail.

Each Christmas Seal on your letters and packages is a symbol of blessing to the victims of tuberculosis, heralding a winning fight for the thousands who, without the scientific aid made possible through your kindness, might perish.





# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

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Vol. XXXVI

DECEMBER, 1921

No. 12



This is the smallest class of Modern Health Crusaders in Guilford County, and its enrollment was brought about by the bite of a mad dog. A pet puppy bit each of these children, which necessitated a visit from the County Health Officer who decided upon prompt treatment, calling in the county nurse to assist.

Each morning for twenty-one consecutive days these children were treated, their behavior and heroism admired and often commented on by the doctor and nurse.

After each treatment there was some little gift in the pocket of the doctor for each brave little patient, and the last day a real present—the girls a string of beads (see picture), the boys a nice pocket handkerchief.

Very enthusiastically is this small class keeping a record of the health chores performed, the father and the mother entering into the game—giving encouragement and co-operation.

These children have given up "pop" (several bottles a day), white bread, tea and coffee and now eat graham and meal bread and drink MILK—lots of it.

## MEMBERS OF THE NORTH CAROLINA STATE BOARD OF HEALTH

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J. S. MITCHENER, M.D., Chief of Bureau of Epidemiology.

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### FREE HEALTH LITERATURE

The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in.

Whooping-cough  
Hookworm Disease  
Public Health Laws  
Tuberculosis Laws  
Tuberculosis  
Scarlet Fever  
Infantile Paralysis  
Care of the Baby  
Fly-Placards  
Typhoid Placards  
Tuberculosis Placards

Clean-up Placards  
Don't Spit Placards  
Sanitary Privies  
Water Supplies  
Eyes  
Flies  
Colds  
Teeth  
Cancer  
Pre-natal Care  
Malaria

Smallpox  
Adenoids  
Measles  
German Measles  
Typhoid Fever  
Diphtheria  
Pellagra  
Constipation  
Indigestion  
Venereal Diseases  
Catarrh

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### FOR EXPECTANT MOTHERS

Rose M. Ehrenfeld, R.N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend send name to the State Board of Health, and give approximate date of expected confinement.

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### THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for The Bulletin each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.

# THE Health Bulletin

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## KEEP WELL THIS WINTER

Winter is coming on and it's going to be the plucky man or woman who doesn't let the first chill bring down the windows or cause the leaving off of the morning bath. Whoever would keep 100 per cent efficient must keep well. There are two particularly important aids in keeping well in winter: Sleep in as much fresh air in winter as in summer and continue the daily morning bath. Leaving off these two health practices reduces one's resistance to the serious winter diseases and decreases his efficiency for his work.

An effective system of ventilation which every one may have is by means of opening two windows, or a door and a window, on opposite sides of the room. A room is always well ventilated when a current is produced. Fortunately for people in the South, there is hardly a whole day or night in the year that does not permit the windows being open. Foul-air diseases in North Carolina should be almost unknown.

Sleeping in fresh air in cold weather is not popular for the reason that people do not prepare for it. Of course they find it cold when they use the same night clothes in winter as in summer. Sleeping comfortable in cold air requires plenty of soft warm cover, underneath as well as on top, and soft warm pajamas, heavy bath robes and warm slippers. When one really prepares for sleeping in fresh air by providing the proper kind of bedclothing and night clothes, he finds it delightful and invigorating.

Furthermore, he finds it easy taking a morning bath and that his health and efficiency are much improved.—R. B. W.

## GREENE COUNTY LEADS

Recently there was quite a bit of publicity about Greene County being the birthplace of Jack Johnson, but the people did not seem to be very enthusiastic over establishing the truth of the report. One might think they were indifferent as to who was born in Greene and what became of them. This is not true as we are about to prove. In one way Greene County has covered itself with glory and is the leading county of our State.

In the past, diphtheria and typhoid fever have been too prevalent in Greene County. If one lived there he stood a very good chance of having the disease and accepting the consequences. When it was suggested to the county commissioners to offer protection to the citizens against these diseases they grasped the opportunity. They knew that when public funds were spent for public health a service was being rendered the people. A member of the State Board of Health held a conference with the family doctors and showed how they could serve their people better than any other physician. They agreed to assist.

At the doctors' offices and at convenient points in the county, crowds assembled at appointed hours once a week for three weeks. Mothers brought their babies, and dad and the other children came too. They stopped work because they knew that "the time was well spent" when they did anything to keep off "the fever" and membranous croup.

Today there are 1,238, or about 50 per cent, of the children between six months and six years of age protected from the "strangling disease" or diphtheria; and 4,529, or about 33 per cent, of the older ones are

protected against diphtheria. This is a record that Greene County can justly be proud of for it is one of the very best ever made by any county.

The North Carolina State Board of Health says, "Hats off to Greene County!" and wishes to express its appreciation to the mothers, the family doctors and all individuals who in any way contributed to the success of this campaign.—J. S. M.

### WHAT ONE CAN DO TO TAKE CARE OF HIS HEALTH

As one death in three is from a preventable disease, there is evidently much that individuals can do of their own choosing to ward off diseases and prolong their life. And it is not always the big things, the most difficult, that a person can do that will count most in maintaining health, but it's the little daily habits and careless customs that count most, either for or against health. For instance:

One can keep their fingers out of their nose and mouth and teach their children to do the same. When one coughs, he can always turn his head and use his handkerchief after having time to reach it. One can wash his hands before meals for his own protection, and after meals for the protection of others. One can avoid close proximity with other persons who are coughing and sneezing, and thus avoid a cold for himself. In short, one can practice personal cleanliness in addition to the regular soap and water cleanliness, and greatly decrease his chances against diseases.

Again, the individual can at least sleep in fresh air at night and can walk in it during the day. He can keep up bodily resistance by seeing that he gets sufficient rest, exercise, and that he never poisons his body with excessive eating, drinking or smoking, or by any other form of excess. Excesses are peculiarly destructive to health.—R. B. W.

### WATER STORAGE

The problem of providing a safe public water supply is of the greatest importance to every community,

as soon as it blossoms out into a town. In this progressive age, the citizens of even the smaller villages are making an insistent demand for the same water supply conveniences as are enjoyed by their more fortunate neighbors of larger towns.

All too often the public is concerned principally with obtaining the conveniences of a public water supply, and the vastly more important factor of "quality" is overlooked. It is this tendency which makes necessary the State laws requiring the State Board of Health to exercise control over the purity and quality of public water supplies.

City officials realizing, themselves, the importance of adequate protective measures for safeguarding the public water supply, are often confronted with an extremely difficult situation in attempting to secure the necessary funds to insure, not only the adequacy of the water supply, but its purity and safety. This is due to the fact that the importance of water supply protection is not sufficiently appreciated, and is a matter of which the average citizen has practically no conception.

The article appearing in this number of the *Health Bulletin*, "Romance of Water Storage," by Col. Geo. A. Johnson, a most eminent sanitary engineer, is rich in valuable information regarding the protection of surface water supplies. Col. Johnson's article deals primarily with the shortcomings of water storage as a line of defense against water-borne disease.

In North Carolina we have very few public water supplies which have the advantage of any appreciable period of storage. Since extensive periods of storage are provided for the untreated surface water supplies referred to in Col. Johnson's paper, his remarks have all the more potent bearing upon our untreated water supplies, which do not have the beneficial effect of storage, however insignificant that factor may be.

Col. Johnson's article dealing with the safe limitations of various protective measures for surface water supplies is a most interesting and instructive treatment of the subject. It is hoped that all the readers of the

Health Bulletin will avail themselves of this opportunity to read fully this most able and interesting discussion.—H. E. M.

### DON'T BE CONFUSED

Judging from letters coming to us, we believe that some people get toxin-antitoxin, diphtheria antitoxin and the Schick test confused, so we will try to tell you briefly the use of each.

Toxin-antitoxin is given to PREVENT diphtheria. Its use is similar to the typhoid treatment which has already been extensively used for preventing that disease. Toxin-antitoxin is given to well children in three doses at intervals of seven days.

Diphtheria antitoxin is administered to a child when it has the disease to CURE, but to be sure of being effective the antitoxin MUST BE GIVEN AS SOON AFTER THE ONSET OF THE DISEASE AS POSSIBLE. When a child has been exposed to diphtheria in a home where the disease exists and the doctor is not making daily visits, a protective dose of antitoxin is often given. However, the protection afforded from this lasts only a very few weeks.

The Schick test was once used very extensively to tell if a child was SUSCEPTIBLE to diphtheria. It is very serviceable but gives no protection nor is it of any value in treatment. Since the discovery of toxin-antitoxin the test is not given so frequently, especially to children between six months and six years. The best authorities advise giving toxin-antitoxin to every child within the above age limits and ignore the Schick test.

Remember that toxin-antitoxin is a prevention and not a cure, and that it takes about eight weeks before it produces enough antitoxin in the blood to enable one to resist diphtheria; that antitoxin is given in treatment, and that the Schick test plays no part in prevention or cure.—J. S. M.

### PEOPLE ONLY HALF LIVE AND HALF WORK

That the average man and woman in the United States today is only half living and is not doing half of the work nor getting half of the joy from work and life that the human being is capable of getting is the opinion of Dr. Irving Fisher, of Yale University, the greatest student and authority of economic health conditions in this country today. In a study that he has made of rural health and national well-being he finds that only something like 1 per cent of people are really well and free from impairment. He says: "What would we think if 99 per cent of a dairy herd or a flock of sheep were found impaired?"

Interpreting this low state of physical health in terms of what it means to the individual, the writer says: "It means that we are losing a large part of our rightful life, not only by death itself, which cuts off many years we might have lived, but also from disease and disabilities which are not fatal but which cripple the power to work and mar the joy of living."

As to what this state of physical inefficiency means to the producing power of this country, the writer again says: "We may assume that on the average, for every death per annum there are two persons sick during the year. This makes about 3,000,000 people constantly lying on sick beds in the United States, of which, on the most conservative estimate, at least half need not have been there. If we translate these preventable losses into commercial terms, we find that, even by the most conservative reckoning, this country is losing over \$1,500,000,000 worth of wealth-producing power every year.

"Personally," says Professor Fisher, "I believe it can be shown that the chief cause of this degeneration is the neglect of individual hygiene, partly from ignorance, partly from indifference, partly from sheer helplessness. The degeneration of our bodies follows a degeneration of our habits. The cure for

the degenerative disease is more personal hygiene—more scientific habits of daily living.”—R. B. W.

### PEOPLE, DOCTORS AND HEALTH WORK

The general public believes that the doctors in North Carolina are not interested in the North Carolina State Board of Health keeping folks well, for which reason they are supposed to be against the work of that body. Quite often we are asked how the doctors of the State support us.

If every citizen believed in availing himself of the protection against diseases as our doctors advise, all would be well. Mr. Reader, go to the doctors of your town and ask them if they have confidence in vaccination against smallpox, if they advise you to take a treatment against typhoid fever, and if it is not safer to give children between six months and six years of age toxin-antitoxin rather than let them take a chance at having diphtheria. We believe that 90 per cent of the physicians in North Carolina will give a full endorsement to all three measures. They know that after one hundred years' successful vaccination has proven to be the only means of preventing smallpox; they are aware that typhoid vaccination has been an

important factor in reducing the number of deaths from typhoid fever in North Carolina from 839 in 1914 to 330 in 1920; and they have read of the extensive and successful use of toxin-antitoxin in the prevention of diphtheria.

SO IF THE PEOPLE OF NORTH CAROLINA WERE TO FOLLOW THE ADVICE OF THE MAJORITY OF PHYSICIANS IN THE STATE, SMALLPOX, TYPHOID FEVER AND DIPHTHERIA WOULD CEASE TO DO THEIR HARM.

During the summers of 1919, 1920 and 1921 about 300,000 people were immunized against typhoid in our State. This has helped wonderfully in lowering the death rate from this disease as mentioned above. There are over 2,200,000 more people who should have taken the treatment. If free treatment is offered in a county only from ten to thirty-three per cent of the citizens take it. But each individual should, as the individual is responsible for himself. By protecting yourself you protect the community also. So the health of the county depends upon the wishes of the people.

WE FEEL SURE THAT WE HAVE THE ENDORSEMENT OF THE DOCTORS. WE NEED MORE RESPONSE FROM THE PEOPLE.  
—J. S. M.

## THE ROMANCE OF WATER STORAGE

By George A. Johnson

Thirty short years ago this country was the victim of gross ignorance respecting the disease-producing potentialities of public water supplies. Typhoid fever was rampant, and in a single decade millions of persons grievously suffered and hundreds of thousands died in consequence of disease brought to them by the unostentatious agency of impure water. Incidentally, in this ten-year period there passed beyond all recovery the stupendous sum total of \$2,625,000,000 in vital capital due to typhoid fever alone.

In the space of this single decade one in every 35 persons in the United States contracted typhoid fever, but the lay public saw nothing particularly alarming in that, reasoning that about so many people every so often were destined to enter the realm of darkness by reason of various and sundry disorders, of which "bowel trouble" was one. But a few men, more given to serious thinking than their fellows, and more skilled in the arts and sciences, took counsel among themselves and decided that the existing state of affairs was en-

tirely unseemly. It was pointed out that in our twenty biggest cities alone 36,000 souls were being hurried toward eternity each year because of typhoid fever, and in that space quite one-tenth of these actually arrived at "the undiscovered country from whose bourn no traveler returns." It was hinted that the vast bulk of this annual human expedition might have received its tickets from polluted water supplies. The question was, what should be done to stop this involuntary permutation of human life into the intangible essence of ethereal similitude?

Sundry remedies were suggested. In the opinion of some, all water used for drinking should be boiled; in that of others that it should be distilled; still others held that it should be treated in domestic filters; while another group advocated the filtration of all water used for the public supply of all needs.

Still another faction submitted that initial prevention was the infallible cure for this desperate state of affairs; that quite the only thing to do was definitely to stop the pollution of all public waters. A branch of this element not only was disposed to prevent all initial pollution, but for fear somebody might slip in a few disease germs while the watch was asleep, desired that the water should be allowed to impound in large reservoirs before use, that such incidental living contamination as might get by the prevention squad would thus be afforded time to repine and die of old age and discouragement through unrequited ambition.

Suffice it to say that of the 22,800,000 people supplied in 1890 from 1,878 public waterworks, less than 1.5 per cent were furnished filtered water. The cholera epidemic in Hamburg had not yet occurred to teach its striking lesson. The classic investigations at the Lawrence Experiment Station had only just gotten well under way. Frankland's invaluable studies on the removal of bacteria by water filters had not yet been developed on a decisive scale, and the scientific mind was still

groping about in the dark for the push button which would force the illumination of the abysmal darkness surrounding the proposition of how to make impure water pure. The only thing clearly recognized was the precept as old as the ages, namely, that the Mosaic Law had merit.

In the decade 1890-1900 things began to happen. Frankland was on the eve of proving that filters remove bacteria from water. The Hamburg epidemic proved that filtration of grossly polluted water would eliminate the disease germs it contained. The studies at Lawrence, Providence, Louisville, Pittsburg and Cincinnati taught the craft how to purify water by practical means. About 1,500,000 more people were added to the total of those whose public water supplies were filtered, raising the grand total in 1900 to about 2.4 per cent of the total population of the United States. The main accomplishment, however, was the development of precise knowledge of the menace in impure water and practical methods of correction.

The decade 1900-1910 was an era of accomplishment. Based upon the knowledge acquired in the previous decade, water filter plants were built in scores of cities, and the filtered water population increased from the 2.4 per cent of the previous decade to nearly 12 per cent. One in every four persons representing the urban population of the United States was being supplied with filtered water in 1910. Moreover, in the ten years ending 1910, the typhoid fever death rate in the registration cities of the United States fell from 36 to 22 per 100,000 population living. The good work has continued through the decade just ended. Some 25,000,000 people are now supplied with filtered water, and the typhoid fever death rate in the registration cities has fallen to an average of 10 per 100,000 population.

Strange to say, however, at this late and more enlightened day there exists an element among public sanitarians, the leaders of which still cling to the idea that it is permissible to rely upon primary lines of defense against water-borne dis-

ease such as depopulation and sanitary patrol of watersheds and storage of surface waters in impounding reservoirs. This element is not insensible to the additional and complete protection afforded by artificial processes of water purification, but for assumed reasons which are utterly beyond the ken of the author they offer vague arguments against water filtration and sterilization "except where necessary."

The filtration or sterilization of all surface water supplies is always advisable, and in the strictest sense is always necessary. Certainly the cost attendant upon the utilization of such definite lines of defense against water-borne disease is justifiable because of the assurance of water purity they afford. Minimization of initial pollution is splendid water supply sanitation; storage is a link, however weak, in the preventive chain; but filtration and sterilization give the finishing touch, and with or without the aid of the primary measures of prevention just referred to they afford the protection against water-borne disease to which every American citizen is entitled. The dice of God are always loaded, and it is just as well to be prepared for the worst. This aphorism applies equally well to water supply practice and all other lines of human endeavor.

So much for a brief resume of the subject of water supply sanitation. The muttons of our repast have not yet been set upon the table, nor particularly mentioned except in the bill of fare, so to speak. To these we now come with the full expectation of serving them with a sometime vinegary sauce of truth; and it is hoped that the author may be pardoned for stating truths in a paper which he has frankly labeled "The Romance of Water Storage."

**The impossibility of preventing absolutely the dangerous pollution of surface waters.**—There are certain standard methods which, individually or combined, usually are followed in attempts to preserve the pristine hygienic purity of surface water supplies, namely, acquirement by purchase of the watershed, diversion of isolated and community sew-

age from the streams draining the watershed, community sewage purification where diversion is neither feasible nor possible, and intense watershed patrol. The author wishes to place himself on record emphatically as favoring any and all reasonable attempts to head off at the source dangerous pollution of surface waters. Unfortunately, however, there is a marked tendency in some localities to place too great reliance on this form of water-borne disease prevention. It is all right so far as it goes, but it is not the Q. E. D. of the problem of satisfactory public water supply by a long shot.

Under normal circumstances the acquirement by purchase of the entire catchment area is too expensive an undertaking to be considered for more than a brief moment. Furthermore, a catchment area being purchased in its entirety, the circumscribed landscape profusely dotted with "No Trespass" notices, and the often more or less somnolent patrol given the charge of enforcing the no-trespass rule, does not and cannot afford adequate assurance that the waters flowing from that area, uninhabited except by the patrol or chance trespassers, will not at some time become the vehicle of disease germs, grievously to upset the calculations of the fathers of the primary prevention idea, and the inner mechanisms of the innocent ultimate consumers of these waters if furnished to them without purification.

A large proportion of Americans are imbued with the idea that democracy, liberty, freedom and the rest of our high-flung but more or less fanciful shibboleths spell license and authority to do as they please. This idea, initiated by Eve, who partook of the forbidden fruit under the urgency of his Gehenic majesty that she assert her independence, is developed to a far greater degree in the American than in any other nationality. The German obeys the ubiquitous "Verboten" of his country because he has been taught to respect his national laws; the Englishman follows the set lines of procedure in his country because the other thing "isn't done"; but the American will travel far to circum-



vent the law in order to show his independence of authority and his ingrained repugnance of organized efforts to curb his natural impulses. In this connection witness the lengths to which the average American will go, the chances he will take and the money he willingly squanders in order to beat the Volstead Act. Men who never took a drink in their lives before the passage of this law now are competent authorities on home brew.

Take a watershed and remove all habitations from it, place a sanitary patrol on the job to prevent the deposition of human excrementitious matter; and if there are birds or rabbits in the woods, or fish in the brooks thereon, or wild berries or flowers for the picking, that patrol must be a mighty energetic and conscience-driven body, individually as well as collectively, to stop at the indefinite confines of the watershed the rabbit hunter, the fisherman, the berry picker and the nature-loving flower gatherer. Then, too, patrolling a watershed is a lonesome job akin to sheep herding, and a little pleasant time-consuming intercourse with potential trespassers is not always rejected by the stern dictates of duty.

The public will enter upon the sacred confines of a watershed whose soil is dedicated by its purchasers to an eternity of hoped-for immaculateness. Such trespassers may be uninvited, and perhaps unwitting, violaters of these hallowed premises, but anybody who has ever viewed a "Battle Royal" knows how difficult it is for a participant to keep an eye on the other contestants, every one of whom is imbued with an all-embracing desire to hand him the lethal punch. Similarly, while passing the time of day or administering a reproof to one trespasser two more at another point may enter upon the ground a patrolman is guarding.

Any one of these, even the patrolman himself, may be an unsuspecting carrier of disease germs. When Nature calls, and her message is of a certain character, we all obey that call without unnecessary delay. If we are supporting an incipient case of typhoid fever we respond with

even greater celerity than when we are not. The nearest cover is promptly sought, and the urge of Nature satisfied. Thereafter a little shower of rain, a short aqueous travel from the clump of bushes to the nearest stream, and Mr. and Mrs. *Bacillus Typhosus* and the children have carried the movement to a point where, without the inhibiting activities of sedimentation, filtration and sterilization, the consumer of the water from this patrolled and supposedly immaculate watershed soon will have a "little movement with a meaning all its own."

#### What water storage will do.—

Where it is feasible on engineering and financial grounds to impound surface water supplies in natural ponds, lakes or artificial reservoirs, there is no question about the advisability of availing of this line of defense between the gathering ground and the ultimate consumer. The trouble is that too great and unwarranted confidence has been placed in water storage competently, uninterruptedly and consistently to remove the menace from such disease germs as may find their way into storage reservoirs.

The value of storage in the correction of the physical and hygienic imperfections of surface waters is very largely measured by the period of that storage; that is, the time elapsing between the entrance and exit of the water in the reservoir. Factors which upset a definite measure of the benefits of water storage are stratification and various currents, temperature changes, and wind action. A reservoir may have a theoretical displacement period of 100 days, and be considered in consequence a pretty fair purifying medium; but short-circuiting of the flow through the reservoir may actually cut the theoretical period of storage to a very few days, or even hours, and by the same token this identical reservoir of which so much is theoretically to be expected may then prove to be a delusion and a snare. Particularly is this condition aggravated when most of the reservoir surface is frozen over and the discharges from the entering streams follow a quite direct line from their

points of entrance to the outlet of the reservoir. Temperature changes in the spring and autumn of the year, bringing about the periodic "overturns" which produce complete vertical mixing of the waters of the reservoir, upset all theoretical calculations. Strong winds toward the reservoir outlet tend to carry swiftly thereto the entering waters of the streams which feed it.

Water storage, in the concrete, will reduce the physical imperfections of a water through sedimentation, in extent depending directly upon the degree of quiescence, the period of storage, and the hydraulic subsiding values of the particles of suspended matter the water initially contains. It will reduce somewhat the color of water due to vegetable stain through the bleaching action of the sun, but the sun is off duty for more than half the time, and even when patrolling its beat its bleaching action is manifested only at or relatively near the surface. Finally, and what is by far the most important, storage of water will reduce the numbers of disease bacteria to a marked degree through the unfavorable environment, sedimentation, insufficient and unsuited bacterial food supply and the inimical activities of predatory protozoa.

**What water storage will not do.—**

Storage of surface water in natural lakes and artificial reservoirs produces a beneficial effect upon its physical and hygienic qualities as an average proposition, but its action is not thorough, nor is it consistently reliable. If polluted water enters a reservoir the chances are a hundred to one that some time, under the primary influence of freshets, short-circuited flows, seasonal overturns or what not, that pollution, in part at least, will find its way to the outlet of the reservoir. The pollution entering the reservoir need not be continuous or large in volume. Indeed, the evidence is striking on the point that the disease germ-infected excrement of only one or two persons is sufficient to contaminate with disastrous results surprisingly large volumes of water. The experiences at Plymouth, Pa., New Haven, Conn., New York, Pa., and Scranton, Pa.,

furnish incontrovertible evidence on this point.

Regardless of all the legislative action in the world, and all the efforts on the part of patrolmen hired to prevent such things, people will fish and even bathe in waters impounded for public supply. There may be only a few who will display such indifference to the law but they exist nevertheless. Again, it has not been found impossible for favored ones with the necessary "pull" to obtain limited permits to fish in such waters. These people have only to be suffering from typhoid fever at the time to make almost inevitable the pollution by them of the waters in which they are fishing. One person can discharge in one evacuation of urine enough typhoid germs to place one or more of these germs in every glassful of a 5,000,000,000-gallon reservoir. Fishing or boating in impounded waters used for public supply without subsequent purification should never be permitted. Even the issuance of limited permits in special cases is a dangerous practice, for once out on the face of such waters in a boat, and with the conveniences of the land a considerable distance away, the use of the water as a point of deposition of dejecta is almost inevitable, and there is no assurance that the person to whom a permit of this character is granted is not unknowingly suffering from incipient typhoid, or a typhoid carrier.

In fine, while the storage of surface waters in large lakes or reservoirs has a decided beneficial effect on the quality of the water as an average proposition, it cannot be depended upon as a consistently reliable performer in the field of water purification. The benefits of storage are here today and gone tomorrow because of factors in themselves beyond the power of man to control. Where a community desires a water supply as safe as the natural conditions and the inventiveness of man can make it, and that water is derived from surface sources something more is needed than the acquirement of the catchment area by purchase, its subsequent unremitting patrol, and the storage of the

run-off for days, weeks, or months. Too many physical, thermal and human vagaries enter into the problem to make it permissible for the sanitarian to stop at this point. The procedure outlined may solve the conundrum for 364 days and 23 hours of the year, but in that one remaining hour all precedents, good intentions and convictions may be blasted from the inherently insecure foundations, and a disastrous epidemic of water-borne disease cast its pall of death upon a misguided community relying on part way means of prevention.

There is no sense at all in persistently residing in a fool's paradise. All surface waters, be they derived from perpetually snow-capped mountain regions or from acquired, untenanted and patrolled areas, are potentially dangerous in that they are open to incidental, accidental, or deliberate pollution. Storage of such waters cannot be relied upon to make them continuously safe for human consumption. To presume that storage can be so relied upon is to ignore the epidemics arising from polluted impounded water supplies, and which are a matter of undeniable record. Such a position is untenable; is unnecessary because of the existing knowledge of how to make public water supplies entirely and continuously safe by methods subsidiary to storage; is fanciful because those whose mentalities convince them that it can be done for the reason that no disaster has yet attended their own practice in that primary line of disease prevention alone, have not had their personal lesson; and romantic altogether in the face of the facts. There is as much sense in such a position as there is in the report that "Mr. Jones fell from the second story of his home and broke his neck. Otherwise he was entirely uninjured."

**Conclusions.**—The endeavor has been made to prove that the problem of making surface waters safe for public consumption involves the application of a chain of preventive measures constituting in effect four major lines of defense against water-borne disease, namely:

(a) Maintain the catchment area in as sanitary a condition as practicable; that is, guard against gross pollution entering the streams and lakes which drain the watershed.

(b) Store the water in natural lakes or artificial reservoirs, provided such storage is available or dictated by sound engineering principles.

(c) Coagulate and filter.

(d) Sterilize.

There will be some variations in the application of these measures. The first (a), stands always unchanged as an elemental requirement of common sense and decency.

In the case of the second (b), where natural facilities for storage are already at hand they will, of course, always be made use of. Where they are not, and the construction of a dam to form a reservoir is required, aside from the purely engineering aspects of this phase the only consideration which need be debated is whether or not the burden on the ultimate filter plant will be substantially lessened by pre-storage for a long period. If the raw water is grossly polluted or heavily charged with mud, silt or clay such storage is sometimes highly advantageous.

In the third case (c) there may be instances where coagulation is necessary and where cost and other factors, including local public sentiment, indicate slow sand filters. Only where coagulation is unnecessary, and where climatic conditions and the chemical composition of the raw water are favorable to such treatment, should slow sand filters be considered. The author prefers the rapid sand filter in any and all cases. It is less easily upset by climatic changes, and in competent hands is susceptible of less likelihood of "going wrong," and of more ready readjustment if it should, than is the old-fashioned slow sand filter.

Respecting sterilization (d), this should never be omitted from the list of preventive measures. It is not a 100 per cent safeguard when used alone except in those very rare cases where the raw water is all of the time, without any exception, free from suspended matter. In all cases

the practice should be maintained of applying the sterilizing agent continuously, never periodically. To sterilize only when it "seems to be necessary" is as pernicious a practice as temporarily suspending the operation of a filter plant or the use of a coagulant when the water looks all right.

In by far the great majority of relatively large communities the problem of protecting the public from water-borne disease should embrace the application of watershed pollution minimization, and purification by sedimentation, coagulation, filtration, and sterilization. Any community using surface water

would do mighty well to set up for continuous maintenance all of these lines of defense. To rely solely on the primary line of prevention, watershed patrol and water storage, is to invite inevitable disaster. Disease germs never send a herald in advance to proclaim their coming, and it is true water works and general civic economy always to be thoroughly prepared for their complete and satisfactory reception. Then, but not otherwise, the ultimate water consumer may drink, not only with his eyes, but freely, satisfyingly, and without hazard of his life.

## SOCIAL HYGIENE CAMPAIGN IN RURAL COMMUNITIES

By Millard Knowlton, M.D., C. P. H.,

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It was a hot Saturday afternoon in August when the Social Hygiene Field Car pulled into Fayetteville and prepared for a special motion picture show out in the street by the market house. Social hygiene is a subject that must be discussed and portrayed with great dignity and care when presented to a mixed audience of all ages. On this particular occasion a dramatic film was shown which drove home some of the truths concerning venereal diseases and the precautions to be taken in combating them.

At the separate meetings for men and women held in the Fayetteville theatre the following week special pictures were used which presented the venereal disease problem much more plainly and gave exceedingly valuable information concerning the ravages of these diseases and the methods of prevention. In showing pictures to and addressing an audience of either men or women from which children are excluded the speaker can be more frank in his statements and more plain in the

portrayal given in pictures without embarrassment.

The campaign was opened in Fayetteville at the special invitation of Mayor Henry E. Williams. When Mr. Williams learned that plans were under way for using the field car in a campaign against venereal diseases he at once urged that Fayetteville be the first town to be visited. The city of Fayetteville and the county of Cumberland agreed to divide the local share of the cost of the campaign so that Fayetteville and Cumberland County would not be left out of this important program.

That the officials were justified in wishing their people to be given this exhibit is indicated by the interest and enthusiasm displayed by the people themselves. Notwithstanding the sweltering hot weather for indoor gatherings the crowds were large and showed great interest in the exhibit being discussed. After hearing the lectures and seeing the motion pictures the people carried pamphlets to their homes to read at their leisure and thus acquire more

information concerning the important venereal disease problem.

One night during the week's stay in Fayetteville the motion picture exhibition was given on the baseball ground at Campbellton which is a mill village suburb of Fayetteville. Mr. Williamson and other mill owners had so thoroughly advertised this showing that a crowd of several hundred people gathered to see the outdoor pictures. When the weather grew threatening and rain actually began to fall these people merely raised their umbrellas and waited to see the picture through before hunting shelter.

In addition to the lectures and motion pictures which constituted the main part of the program, there were other features that attracted wide attention. The market house in the center of the city afforded an admirable place for displaying an exhibition consisting of charts bearing illustrations and legends and lantern slides shown by means of an automatic stereopticon. This exhibition under the market house drew large and interested crowds.

The week's campaign in Fayetteville closed with a Sunday afternoon meeting for men which well illustrated the great interest taken in the campaign by the people of Fayetteville. On a sweltering hot Sunday afternoon in the middle of August more than five hundred men gathered to hear a lecture and see motion pictures depicting the ravages of venereal diseases. The fact that these men sat quietly through the lecture on such a hot day indicates their great interest in the matter under discussion.

After the campaign in Fayetteville the Field Car was taken out over Cumberland County, spending one day in each of twelve cities. These were Cumberland, Hope Mills, King Hiram, Glendale School, Manchester, Eureka, Linden, Godwin, Wade, Eastover, Stedman and Cedar Creek. The visit to each of these places included an afternoon for women and an evening meeting for men.

At Glendale School one woman stopped the show soon after it began and said if the rest of the picture were as good as the first, she

wanted her two daughters to see it. The other women present consented to wait until she could go home and get her daughters, which she promptly did.

At Hope Mills a man came to the lecturer after seeing the picture and offered him a five dollar bill, saying that the show had been worth more than a hundred dollars to him and his two boys and that he hoped the lecturer would accept the five dollars as indicating his appreciation of the work. Of course, his money could not be accepted but the tender of it was a gratifying evidence of appreciation.

At King Hiram just as the meeting for men had closed a large number of men drove up in automobiles and asked for a special show. They had been to an official church meeting and missed the first show, so a special show was given for their benefit.

In offering congratulations to the speaker after one of these meetings during the social hygiene campaign, men frequently remarked: "I wish I had known this when I was a boy!" Women would thank the speaker for telling them the story and often add: "It is a great work you are doing—a greater work than the preacher is doing."

One old grandmother in Cedar Creek said: "No woman in the world should miss seeing these pictures." At Stedman a man said that he had driven nine miles with his team of mules over the rough roads to see the picture and it was such a fine show that he would come over the rough roads again to see it a second time if it were shown again.

At the meeting in Cedar Creek an old patriarch eighty-four years old got up and said: "I am glad I saw this picture and heard this talk because I can see now how fortunate I have been to have led a clean life. I hope every young man here tonight will take this lesson to heart. We certainly ought to be thankful to the government for the good it is doing with these pictures. There is only one mistake that the State and government have made. They ought to have begun this work fifty years ago."

Another man said that he would endorse all that the patriarch had said, and continued: "Like him I have been lucky enough to have been a clean man all my life. I am the father of thirteen children, all healthy and sound, including five sets of twins. I am not priding myself but all I can say is these pictures prove it pays to lead a clean life. I can repeat what the patriarch said that it is a pity the state and government did not get here with this show fifty years ago!"

After spending three weeks in Fayetteville and Cumberland County, the Social Hygiene Field Car went to Harnett County for a two weeks' stay. The Commissioners of Harnett County did not think they could spare the money to pay the local share of the expense for so long a stay, but Mr. Will Erwin, of the Erwin Cotton Mills, paid one hundred dollars toward defraying the expenses of the exhibition in order to have it stay long enough in the county to visit his mills for the benefit of his mill workers.

In Harnett County the schedule called for visits to Dunn, Angier, Lillington, Buies Creek, Coats, Duke, Chalybeate Springs, Cokesbury, Maners, Pineview, Flat Branch Church and Bunnlevel. At these various places the exhibition was received with the same enthusiasm that had prevailed in Cumberland County. This interest and enthusiasm is illustrated by an incident that happened at Duke. In order that the schedule might be extended over two days at Duke arrangements were made for exhibitions on Sunday. So great was the interest in social hygiene and venereal disease prevention that the ministers dismissed their churches on Sunday night in order that their congregations might attend the social hygiene exhibition and learn the great medical and moral lessons taught by the pictures and lectures.

Popular interest in the social hygiene exhibition and the cause it represented was not limited to cities and towns but it extended into the strictly rural districts like Cokesbury, Maners, Pineview and Flat Branch Church. In spite of long distances and bad roads the people,

women as well as men, came from all directions to learn the lessons of the exhibition. Men came barefooted and in their work clothes just as they left the fields and women came to the afternoon lectures in their wrappers and sunbonnets just as they left their household duties but the lessons learned were just as important to them as if they lived in gilded palaces and were always garbed in silks and satins.

At Pineview there was neither schoolhouse nor church to serve as an auditorium and one of the tobacco barns was converted into a hall. The people were notified in advance to bring their own chairs so that they might be comfortable while hearing the lectures and seeing the pictures. On each side of the barn stalls had been built for mules and the animals stabled there looked out upon this strange scene—a meeting with motion pictures held in a tobacco barn.

The Social Hygiene campaign was carried on for colored people as well as white. The State Board of Health employed a colored physician for the work with his own people and meetings for colored people were held at the same time that meetings were held for white people. This plan of campaign made the work doubly effective, since with one outfit simultaneous meetings could be held for white and colored people by the addition of a colored lecturer to the personnel. This arrangement was continued in all the counties visited by the Social Hygiene Field Car.

From Harnett County the campaign was carried to Robeson County where the Board of Commissioners promptly appropriated \$750 to pay the local share of the cost for a five weeks' campaign. So popular did the campaign prove to be in Robeson County that before it was over the County Commissioners asked for an extension of time allotted to Robeson County so that additional points might be visited. The mill owners asked for special meetings to be held for their mill workers and offered to pay the local share of the cost of such meetings. In response to these requests, the stay in Robeson County

was prolonged to seven weeks instead of five as originally planned.

The original five weeks' schedule called for visits to Lumberton, Red Springs, Lumber Bridge, Parkton, St. Pauls, Long Branch, Orrum, Barnesville, Marietta, Oak Dale, Fairmont, Smyrna, Center, White Pond, McDonalds, Alfordsville, Rowland, Back Swamp, Raft Swamp, Philadelphus, Harmony, Pembroke, Maxton, Shannon, Antioch, Tabernacle, Tolarville, Saddle Tree, Union Chapel, Panthers Ford. The extension of time permitted visits to Centenary, Purvis, National Cotton Mill, East Lumberton Cotton Mill, Jennings Cotton Mill, St. Paul's Cotton Mill, Prospect, Rennert and Jimmy Dial's, and a return visit to Lumberton. This itinerary covered the county thoroughly and gave every one an opportunity to visit the exhibition.

An interesting feature of the campaign in Robeson was visiting some of the Indian communities. Thus in this county exhibitions were given to three races of people—the white race, the colored race and the American Indian. The Indians proved themselves to be just as much interested and as enthusiastic about learning the facts concerning venereal diseases and their prevention as the people of other races. Legend has it that some of the Indians in Robeson County are descended from some of the earliest English settlers on the east coast who took to the woods and married Indian wives. Some of the Indians bear English names said to have been borne by English settlers in the colony that disappeared from the coast leaving no trace except the word "CROATAN" carved on a tree. However this may be, it is certain that the Indians in Robeson County are quite different from the Indians in the far West who still roam the forests, wear feathered garb and occasionally live in tepees or wigwams after the primitive style.

From Robeson County the exhibition went to Hoke County where a week was spent in visiting the several points in the county. At these points large crowds visited the exhibition as elsewhere. It was in Hoke County that Dr. Walter Brunnett, of

the American Social Hygiene Association, visited the exhibition to obtain a first hand impression of the work. The traveling exhibition was conducted as a demonstration of this method of educational activity by the United States Public Health Service, the American Social Hygiene Association, and the North Carolina State Board of Health in cooperation with the local communities.

In carrying out this arrangement the Public Health Service detailed Dr. Charles V. Herdliska to serve as advance agent and publicity director, and Regional Consultant W. H. Gillett and later Dr. Louis Hough as official lecturer. The American Social Hygiene Association furnished the motion picture field car equipment and Fitzgerald the operator. The State Board of Health contributed the services of Dr. W. J. Hughes for work among the colored people. The expenses of the work were divided among the different agencies on as near an equal basis as possible. Since the total expenses exceeded the first estimate the local communities paid less than their fourth of the cost.

The fifth and last county to be visited was Durham, where the exhibition was shown for three weeks. The practice of beginning in the cities and then going to the rural sections that was begun in other places was reversed in Durham County where a beginning was made in the rural sections and the campaign ended in the city of Durham, which is the largest city visited.

Among the notable visitors who studied the field car exhibition as a means of public health education was Dr. Karl Driml, representing the Czecho-Slovakian government, who spent some time studying the exhibition methods in Durham and Durham County. Dr. Driml was much interested in all of the work he saw under way and expected to adopt similar methods for the instruction of his own people upon his return to Czecho-Slovakia.

In Durham County, as in some of the other counties, the exhibit was made possible by the industries paying a share of the local part of the cost. Managers of industries were

glad to do this because of the success of the exhibition in other industrial communities, such as Duke in Harnett County.

Without going into tedious details concerning the matter, the success of the campaign in Durham County is indicated by the reports showing that the attendance at the different meetings totaled nearly thirty-five per cent of the entire population of the county, as against an average attendance for the five counties of thirty-one per cent of the total population. In view of this great interest shown by the people of Durham and Durham County in the social hygiene exhibition, it is a matter of disappointment that the officials of the city and county did not proceed with the establishment of a venereal disease clinic after this great interest had been aroused. Durham thus remains the largest city in the State that has not yet undertaken to provide facilities for treatment as a part of its program for the prevention of venereal diseases.

The reports of the lecturers in connection with this campaign show that 319 lectures were given, attended by a total of 53,569 people, which amounted to thirty-one per cent of the total population of the counties visited. Considering the fact that not much over one-half of the population belong to the age groups eligible for admission to the social hygiene exhibition, this indicates that more than half the adult population of these five counties heard the lectures and saw the pictures which comprised the exhibition. The report also shows that these visitors carried home 124,794 pamphlets that were undoubtedly read by a large number of people unable to attend the meetings. Who can estimate the value of such work to a community?

For the purpose of obtaining a definite expression as to the value of educational work carried on by means of a motion picture field car the United States Public Health Service prepared a questionnaire which was sent out to more than two thousand people in the five counties visited. The results of this questionnaire are indicated by the following statements occurring in the report upon the tabulation of the replies:

"The results of this questionnaire readily lend themselves as a convincing statement of the success achieved by this combination of educational publicity devices: Motion pictures, talk, and pamphlets—a statement which it will be difficult for any critic of this traveling field car to refute."

"The most casual survey of these chief impressions reported by adults who attended the Exhibition, reveals their wide range and interest; and as a corollary, the many-sided appeal made by the social hygiene field car."

The almost universal approval of the exhibition and the methods of conducting it is indicated by the small number of criticisms in reply to the questionnaire. One of the questions was, "Did you find fault with anything in the exhibition?" Only four per cent of those replying answered, "Yes," and most of these "faults" were really suggestions for improving some detail. For example, a number were fearful that information concerning sex and venereal diseases was being given children at a little too young an age. One even thought that adults were better off ignorant of such matters! Other "faults" were that "It does not come often enough—people forget," "Did not stay long enough," and "The only fault was that it was put on too fast to be understood as it should be."

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# HEALTH BU

*Issued by the Chief Medical Officer  
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